Distributor vs. Direct Factory Sales . . . . . Pg 21

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150 Mfrs. Products At Western Show

LOS ANGELES—Products of some 150 manufacturers are scheduled to go on display, and a series of technical conferences will discuss current practices in application of products, at the Western Air Conditioning, Heating, Ventilating and Refrigeration Exhibit and Conference, which opens Wednesday, April 27 at the Shrine Exposition Hall here, and continues through Saturday, April 30.

The Exhibit will be open from

(Continued on Page 27, Col. 2)

ARW Now Recognizes Branches As Members

CLEVELAND—The board of directors of the Air Conditioning & Refrigeration Wholesalers approved a change in membership identification at their meeting held here recently.

At the same time, the board announced the election of 26

(Continued on Page 4, Col. 3)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

How To Get Your Kids Into College

Every year it becomes tougher and tougher for high school graduates to enter the colleges of their choice. There just isn't room for them. And it's going to get worse . . . much worse . . . when the "war babies" try to enroll in 1962-3-4-5-6.

As matters stand now, colleges and universities will have to erect at least 25% more buildings, recruit 25% more teachers within the next few years. Most of them won't be able to do the former; practically none the latter.

(Only way we can recruit the teachers will be to raise salaries heftily. Where will we get the money? More buildings will mean much higher taxes, too.)

The "Johnny can't read" types won't have a chance, anywhere, of course. Neither will many B-average students!

And gone will be our democratic ideal of higher education for all who are willing to apply themselves. Instead, only the ultra-superior intellectuals (as in Europe) probably can be considered in the next five to 10 years.

In a recent issue of a national magazine Dr. Grayson Kirk, president of Columbia university, presented a solution which is so simple and so *right* that it should have been obvious long ago.

A college degree in three years, instead of four, by adding a third semester to each school annum.

Under the two-semester system our universities have "idle plant capacity" approximately four months a year. What an economic waste!

Why saddle ourselves with tremendous additional taxes to build enormously expensive additional classrooms and laboratories and dormitories which also will *lie idle* four months out of each year?

Too Hot To Study In Summer?

Our present two-semester program originated more than 100 years ago, when the boys and girls were needed back on the farm to harvest crops which ripened in the Good Ole Summertime.

Thus it is an anachronism. Less than 5% of our college applicants today ever will work on a farm . . . and who needs 'em, anyway, with foodstuffs in such embarrassing surplus?

Dr. Kirk noted that there are two objections to a summer semester:

(1) Faculty members miss long summer vacations.

(2) Students complain that classrooms and living quarters are too warm during a third term.

Every reader of this publication knows the answer to this second objection. Air conditioning existing school buildings and dorms would cost a tiny fraction of the expenditure for erecting new structures.

Dr. Kirk supplies the answer to the first obstacle to wit: more money for the professors would result.

A three-semester year means 33% more turnover, 33% more student fees. Perhaps 20% of this extra income can be funnelled to the professors, he estimates. Once they try it they'll love it, and to hell with those oversized vacations, it can be ventured.

By instituting a three-semester collegiate year, several previously "unsurmountable" problems are tackled:

(1) Need to raise taxes alarmingly;

(2) Need to accommodate far more students;

(3) Upgrading of teacher salaries, thus making the

(Continued on Page 12, Col. 1)

'Gas Air Conditioning Needs More Units, Lower Prices'

CLEVELAND — To increase its share of the air conditioning market, the gas industry must accomplish several distinct objectives, according to a group of speakers on gas air conditioning at the Research and Utilization Conference of the American Gas Association held here last week.

At one time or another each of the speakers mentioned these items: the industry must develop air-cooled units; a lower first cost must be obtained; a fuller line of products, covering intermediate tonnages must be developed; many potential consumers are not even aware that gas air conditioning exists.

(Having independently reached much the same conclusions, NEWS editors shall discuss them in detail in the May 30 issue "progress report on gas air conditioning.")

Engine driven compression systems, free piston or otherwise, offer the best approach to

(Continued on Page 4, Col. 5)

UA Loses Boycott Row In K. C. Area

WASHINGTON, D. C. — The National Labor Relations Board has ordered United Association Local 8, Kansas City, Mo., not to engage in secondary boycotts against Bishop Plumbing & Elect. Co. or other members of the United Contractors Council.

The council is an organization of some 35 specialty contractors in the building and construction industry in the Greater Kansas City area.

At all times material to the case, the council was a party to a collective bargaining contract with Local 787, United Construction Workers, United Mine Workers of America, according to NLRB Trial Examiner George A. Downing.

In his intermediate report

(Continued on Back Page, Col. 1)

Forecasters See Hot Spells Early, Often, Most Everywhere

Hot spells early, often, and over most of the nation. That's the consensus of the weather forecasters for the late Spring and the coming Summer months.

●

WASHINGTON, D. C.—Temperatures should average above seasonal normals over most of the nation through the middle of May, according to the 30-day U. S. Weather Bureau forecast.

The weather map for this period shows that above-normal temperatures are likely to prevail in almost all of the thickly populated areas, with the exceptions being the upper Plains and Rockies region, and the Pacific Northwest. "Much Above Normal" temperatures are predicted for the upper Atlantic Coast region and the Eastern Border states.

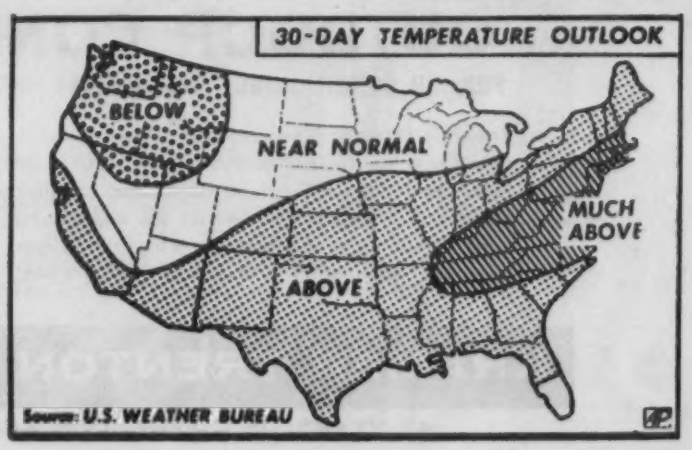
* * *

●

NEW YORK CITY—Numerous heat waves for the Eastern part of the U. S. and "a real hot one" throughout the West, are the sum and substance of the forecasts by Irving P. Krick Associates, Inc. which are being broadcast on Sundays through May 8 in a Minneapolis-Honeywell sponsored series on the 200-station NBC radio "Monitor" network.

Detailed Summer weather forecasts (for example, July is expected to be much hotter throughout the country's midsection than was the case in 1959) are combined with strong

(Continued on Back Page, Col. 3)



Wholesaler Sales Up In February

WASHINGTON, D. C. — Although down 1% from January, sales of air conditioning and commercial refrigeration equipment distributors in February rose 16% compared with the year-ago volume, according to the monthly wholesale trade report of the Census Bureau.

The distributors' sales for the first two months of 1960 were 7% better than in the like period of 1959. Their inventories at the end of February increased 13% compared with a year earlier and 3% compared with a month earlier.

February sales of plumbing and heating equipment and supplies distributors were 1% ahead of January and 5% above the previous February, according to the report.

Crowe Heads Product Sales for Wolverine

DETROIT—R. C. Crowe, recently named sales manager of the New York district, has now been appointed manager of product sales for Wolverine Tube, division of Calumet & Hecla, Inc.

R. C. Crowe

John M. Dumser, director of marketing, indicated that Crowe will be responsible for the sale of all division products on a national basis. These will be marketed coast-to-coast through the company's district sales offices.

Joining Wolverine Tube in 1950, Crowe has served as industrial and public relations supervisor as well as in various sales capacities, including manager of industrial sales. He replaces L. G. Fox, who will now take up a similar position with Flexonics Corp., a recent acquisition of Calumet & Hecla as a subsidiary firm.

Gas Appliance Mfrs. Elect Davis President

WHITE SULPHUR SPRINGS, W. Va.—Wendall C. Davis, president of Cribben & Sexton Co., Chicago, a subsidiary of Waste King Corp., was elected president of the Gas Appliance Manufacturers Association.

Davis, who had been first vice president of the association, succeeds Edward A. Norman.

Other new officers are: first vice president, William G. Hamilton, Jr., president of American Meter Co., and second vice president, John F. Ray, vice president in charge of sales for General Controls Co.

Put Hexachlorophene In Room Unit Filter

TOLEDO—A new room air conditioner filter, designed to trap irritating pollen and airborne bacteria along with other foreign particles, has been announced by Owens-Corning Fiberglas Corp.

The filter will contain hexachlorophene for added protection from bacteria and will be available in a new green color.

"Laboratory tests show that the new filter traps most pollen and air-borne bacteria," the company said. "Hay fever sufferers, particularly, should gain added relief.

"The filter can be trimmed to fit any size room air conditioner thus eliminating the necessity of carrying a variety of sizes. The filter is available in 12 or 24-unit cartons or in a display carton containing 36 units."

Jet Heet, Crane Sign Pact on Service, Parts

ENGLEWOOD, N. J. — Jet-Heet, Inc. here will take over the national service and parts supply for all Crane Co. installations of Jet-Heet furnaces, a joint announcement by the two companies revealed.

Calvin D. MacCracken, inventor of a novel flexible duct heating system and president of Jet-Heet, creative development and research engineer, said that this national agreement includes all burner inventory and stock of the Crane Co. pertaining to the system. Crane had previously operated as a licensee of Jet-Heet.

Jet-Heet is now manufacturing the Jet-Heet system for home heating and Jet-Cool for central air conditioning.

The firm announced that the present service arrangements on all Jet-Heet furnaces will be maintained and integrated into its rapidly-forming national sales organization of franchised dealers. A midwest parts depot for the stocking of spare burner parts is being opened by Jet-Heet to assure no interruption of national service, it was stated.

Crane, which recently purchased National-U. S. Radiator Corp., is moving its heating and plumbing operation to Johnstown, Pa.

"The move by Jet-Heet to service Crane's equipment marks the first step of the Englewood, N. J. firm toward national operation," it was pointed out. "Jet-Heet has done considerable research and development for many of the nation's largest manufacturing firms, but only recently went into the manufacture of products for the consumer market with their Jet-Heet and Jet-Cool systems."

The equipment was on exhibition at the Oil Heat Institute show April 4-7.

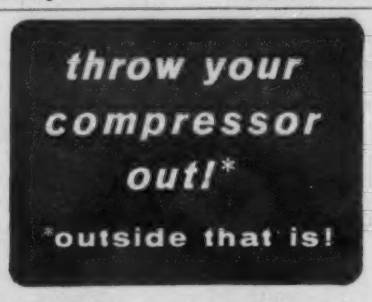
Legal Eagles Gird For Bid Depositories

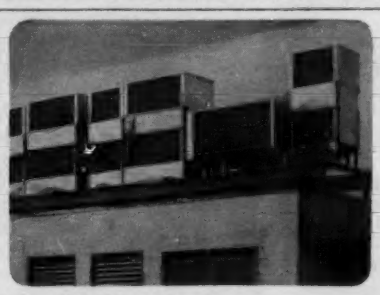
SACRAMENTO, Calif. — Bid depository complaints, such as that against Inland Bid Depository which serves the Riverside-San Bernardino counties area, are now handled by a special anti-trust section of the California state Attorney General's offices, set up in 1959.

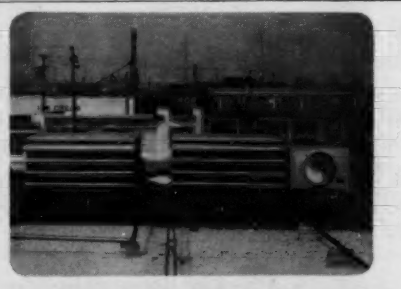
In the head office of the Attorney General in San Francisco assigned to this field are Assistant Attorney General Wallace Howland, who heads all anti-trust activities, and William Cohen.

In the Los Angeles office are special Assistant Attorney General William C. Dixon and Deputy Attorney General Vincent W. Thorpe.

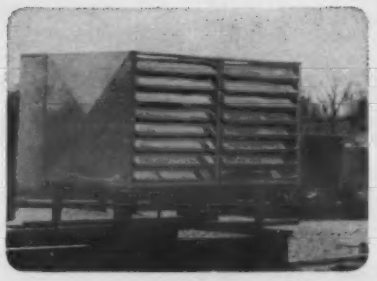
In the Riverside complaint against Inland Bid Depository and Allied Construction Industries appear the names of Dixon, Thorpe, and Deputy Attorney Generals Miles J. Rubin and George Roth of the Los Angeles office.







STOP wasting costly building space!



USE KRAMER
OUTDOOR CONDENSING UNITS
FOR AIR CONDITIONING—COMMERCIAL, INDUSTRIAL & SUPERMARKET REFRIGERATION

Kramer's Outdoor Condensing Units will operate outside without any additional protection or adjustment under all temperatures and weather conditions. They can be used for any application —air conditioning, commercial refrigeration, supermarket application, or industrial refrigeration.

Completely assembled, wired, tested and factory run-in, the units arrive on the job ready to operate. Simple hookup eliminates costly installation and control adjustment time. Kramer's Outdoor Condensing Units end waste of valuable indoor space.

WRITE FOR BULLETIN

KRAMER TRENTON CO., Trenton 5, N. J.

47 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

May Climatological Evaluation Chart Gives '58 and '59 Ratings for 31 Cities

NEW YORK CITY—As it did last year, the NEWS this spring and summer will publish a "climatological evaluation of air conditioning weather" for the key months of last year compared to "normal" and the previous year.

As before, the evaluation has been made by Weather Trends, Inc., a private weather forecasting and weather-recording organization. Months covered are May through August.

On this page is presented the first of the four charts which comprise the evaluation. The charts for June, July, and August will be published in subsequent issues. They are being reproduced with the thought that they will be of value to those in the air conditioning industry who are gearing promotional efforts to individual markets.

Two innovations mark the new evaluation. As before, Weather Trends placed ratings of 5 (superior), 4 (favorable), 3 (normal), 2 (unfavorable), or 1 (poor) on the air conditioning "sales climate" for the cities covered (31 this year).

However, a finer breakdown of the so-called "normal" category has been initiated, using 3, 3—, and 3+. "We had found," a Weather Trends spokesman explained, "that there could be too wide a difference within the normal category and we think the differentiation is warranted."

Another innovation is Weather Trends' comparison to the previous year. Thus, the air conditioning weather for each of the 31 cities during the period covered was rated as "much better," "slightly better," "better," "similar," "worse," "slightly worse," or "much worse" than in the corresponding month of 1958.

The 1 to 5 ratings are related to "normal" conditions based on long-term Weather Bureau records. Also reviewed and analyzed, and taken into consideration for the ratings, were such matters as:

1. Departures of average monthly temperatures, average maximum, and average minimum readings for each city and each month.

2. Number of days of 90° and over as compared to normal.

3. Duration and extent (extreme reading) of hot spells, if any, during each month.

4. A check on the number of wet days, humidity readings, and percentage of sunshine to normal to see if there were any unusual departures from normal.

Weather Trends' evaluation for the four key months of 1959 compared to normal shows that the air conditioning weather was, generally speaking, pretty good, although the real good weather came later in the season.

For instance, for May, none of the cities got a 1 ("poor") rating and only one was rated 2 ("unfavorable"), while 10 received a rating of 4 ("favorable") and three a rate of 5 ("superior"). Seventeen got a rating of 3, 3—, or 3+. Compared to 1958, 18 of the cities were rated as better, slightly better, or much better.

June was about the same. Two cities were rated as "superior," nine as "favorable," 18 as about "normal," two "unfavorable," and none "poor."

Compared to "normal," July was not quite so good. Two were rated "poor," five "unfavorable," 18 about "normal," four "favorable," and two "superior."

But August was real good. Fourteen of the 31 cities got a "superior" rating, eight were rated "favorable," and seven about "normal." Only two got an "unfavorable" rating and none a "poor" rating.

Climatological Evaluation

Legend for 1959: 5—superior; 4—favorable; 3—normal; 2—unfavorable; 1—poor.

Legend — Comparison 1958: MB — much better; B — better; SB — slightly better; S — similar; MW — much worse; W — worse; SW — slightly worse.

Key City	MAY, 1959 Compared to: Normal	1958
Atlanta	3	SB
Baltimore	5	MB
Birmingham	3+	S
Boston	5	MB
Buffalo	4	B
Chicago	4	SB
Cincinnati	4	B
Cleveland	4	B
Dallas	3	SW
Denver	3—	W
Des Moines	3	S
Detroit	3+	SB
Houston	3+	SW
Indianapolis	3+	SB
Kansas City	3+	SB
Los Angeles	3—	W
Memphis	3+	S
Miami	3	S
Minneapolis	4	SB
New Orleans	3	SW
New York City	4	MB
Oklahoma City	3	S
Omaha	3	SW
Philadelphia	4	MB
Phoenix	3	W
Pittsburgh	4	B
Portland, Ore.	2	W
Raleigh	3	B
Richmond	4	MB
St. Louis	4	B
Washington, D. C.	5	MB

Prepared by: Weather Trends, Inc., 550 Fifth Ave., New York 36.

Acme Industries Net Up 283% on 12.2% Sales Rise

JACKSON, Mich.—Acme Industries, Inc. reports net earnings jumped 283% and sales increased 12.2% in the first half of the current fiscal year as compared with the same period last year.

Net earnings for the half-year period ended Jan. 31 were $108,182 and sales were $4,228,227, as against net income of $28,245 and sales of $3,769,138 a year ago.

Earnings for the six-month period ended Jan. 31 were equivalent to 27 cents per share of outstanding stock. In the same period last year earnings were 7 cents a share.

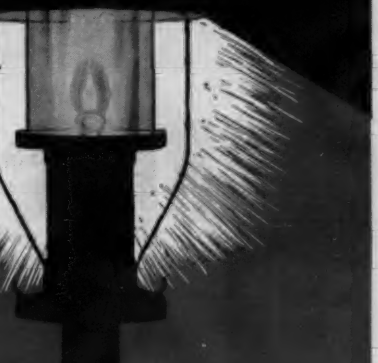
Both sales and backlog of orders are "substantially above last year," Acme said.

In celebration of our 60th year of world-wide progress . . .

A Genuine Coleman
gas-lite
Yours to give now as a "buyer's bonus" when you install

Coleman

America's Only Bonded Line Heating and Air Conditioning



This new Coleman Gas-Lite is the key to the most complete and most exciting business-building program ever offered through heating and air conditioning dealers. Most complete because it includes every imaginable aid to selling. Most exciting because it gets an enthusiastic response from everyone in the market for heating or air conditioning.

Here's the plan. As an anniversary salute, we're making it possible for you to offer a genuine Coleman Gas-Lite to your customer with the installation of any Coleman central furnace, wall heater, floor furnace or air conditioner. It's an offer your prospects will go for when you give them the lamp as a bonus for buying now! For more information, use the coupon below or call your Coleman distributor for your complete program kit containing full details—*right away!*

Works on any gas—installs 4 ways. Can be mounted on post (as at left)

With decorator post

Can be mounted on table

Can be mounted on wall with decorator bracket

Coleman's Gas-Lite promotion will be announced to home owners in the March 26 Saturday Evening Post

Best selling tool of all—you offer this exclusive $500 bond with every unit you sell

Also makers of famous Vit-Rock water heaters, Decorama space heaters, Coleman lanterns, camp stoves, jugs and coolers—mobile home heating and air conditioning

The Coleman Company, Inc., Wichita 1, Kansas

Quickly send more information on your Gas-Lite promotion.

*Name*_____ *Title*_____

*Firm Name*_____

*Address*_____

*City*_____ *Zone*_____ *State*_____

BOARD OF DIRECTORS of Air Conditioning & Refrigeration Wholesalers, representing 448 wholesale locations, pictured during recent Cleveland meeting. Around table from left are: Harry Dawson, New Orleans; Paul Cato, Fort Worth, Texas; C. G. Koopman, Boston; Irving Fajans, New York City; Elmer Davey, Akron, Ohio; Mrs. Kaye Crist, ARW secretary; W. C. Miessemer, Phoenix, ARW president; Thom Muir, ARW executive director; E. P. Sorensen, Chicago; Paul Bodwell, Harrisburg, Pa.; E. S. Diggle, Columbia, S. C.; Frank Pond, Minneapolis; and Jack Tupper, Seattle.

ARW Membership--

(Continued from Page 1, Col. 1)

new members of the association.

Regarding the change in membership identification, it was pointed out that in the past, ARW has identified only the headquarters location as a member, irrespective of the number of branch operations controlled and operated by any member.

"ARW represents all headquarters and branch operations," stated W. C. Miessemer, president of ARW, "and therefore, in the future, all will be listed as members.

"This does not change our member structure in any way, for the constitution of ARW has stated—'Branch stores, either conducted under the same name or operated by a member under a different name, or as a separate corporation are automatically included in the association activities.'

"Under these conditions, it is misleading to the industry to list only the headquarters. Everybody is interested in the market coverage and as such, these branches do offer their own market coverage."

The board of directors also announced the election of the following firms to full membership in ARW:

Allen Supply Co., Altoona, Pa.; The Harry Alter Co., Inc., Chicago (three locations), New York City, Dallas, and Atlanta; Refrigerating & Power Specialities—San Francisco, Stockton, Calif.; Portland, Ore., Tacoma, Wash., and Seattle, Wash.; Authorized Supply Corp., Los Angeles; Arrow-Risco, Inc.—Los Angeles, North Hollywood, and San Gabriel, Calif.

California Refrigeration Co.—San Francisco, Oakland, and Fresno, Calif.; L. B. Marsh Allied Refrigeration Co.—Long Beach, Santa Ana, San Bernardino, Calif., and Las Vegas, Nev.; Allied Refrigeration Suppliers, Inc.—San Diego, El Centro, and Palm Springs, Calif.

"ARW now represents 448 wholesale locations throughout the United States, Canada, Europe, Australia, and South Africa," it was pointed out by the association.

Carrier Working 3 Shifts, Saturday

SYRACUSE, N. Y.—Production at Carrier Corp. is now on a three-shift operation, and the plant worked Saturday, April 16, and was scheduled to be in operation Saturday, April 23, company officials announced last week.

Following a strike call early in March, following disciplinary action taken against officers of Local 5895 United Steel Workers, the plant had been closed for several days by picketing strikers.

Late in the month, a back-to-work call brought enough workers back into the plant to start one shift operations. Last week the company said that 2,796 production workers were on the job, compared with 3,251 before the strike, and production was on a three-shift basis.

Despite the loss of production resulting from the strike, Carrier officials said they hoped to approach the goals for the production increase which had been set for 1960.

Negotiations are continuing on a union contract with the United Steel Workers Local, two bargaining sessions having been held last week.

AGA Meeting--

(Continued from Page 1, Col. 4)

meeting competition, feels R. J. McCrory, chief of mechanical division, Battelle Memorial Institute, considered by many to be the father or "at least the uncle" of free piston compressors.

"Engines have the least amount of unknowns," McCrory said, "their advantages and weaknesses are already realized and can be worked with more confidence. They drive conventional refrigeration systems whose operation and make-up are also well known."

R. H. Eskew, vice president of Arkla Air Conditioning Corp., and K. T. Davis, manager of gas air conditioning at Bryant Mfg. Co., gave progress reports on their respective absorption air conditioners. (The relative impact of the two companies and of other gas air conditioner manufacturers will also be treated in the May 30 issue of the NEWS.)

J. E. Kaufman, manager of the air conditioning, refrigeration, and heat transfer section of Southwest Research Institute, reported on research directed toward developing an air-cooled lithium bromide absorption unit for intermediate tonnages centering around 20 ton.

C. B. Gamble, Jr., vice president of Alabama Gas Corp., summarized six years of AGA air conditioning research and the role which it played in the rapid gains already made by the gas industry.

STORE...

SUITE...

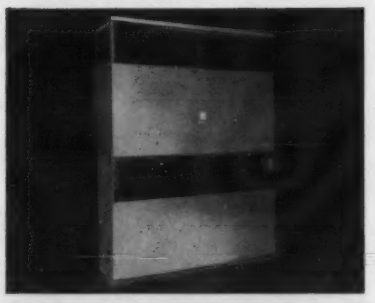
FLOOR...

BUILDING...

CARRIER HAS A HEAT PUMP FOR ANY COMMERCIAL JOB!

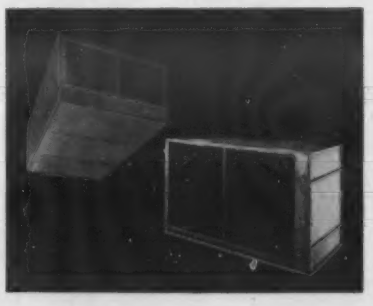
You can meet the needs of every customer for a commercial job in the complete Carrier Heat Pump line. There's a Heat Pump Weathermaker* for any structure from a small retail shop to a factory or multi-story building. The smaller sizes, from 2 tons to 27 tons, will handle most situations. For the really big jobs, you can use a Heat Pump Weathermaker System—components factory-tailored to meet your requirements.

The Carrier residential line is just as complete. Call the Carrier distributor listed in the Yellow Pages. Or write Carrier Corporation, Syracuse 1, New York. *Reg. U.S. Pat. Off.



FOR SUITES OF OFFICES Flexible enough to meet the requirements of any business. For example, a single unit can distribute conditioned air through inexpensive ductwork. Or units can be installed without ducts. Cooling capacities: 7.5, 10 and 15 tons.

FOR BIG MONEY JOBS. For the largest office building, factory, department store, church or apartment house, the Carrier Heat Pump Weathermaker System is factory-tailored to provide the proper capacity range. Cooling capacities from 6 tons up.



FOR SHOPS AND STORES. This two-piece model Carrier Heat Pump is ideal for smaller establishments where lack of space is a problem. The indoor section can be ceiling-suspended, wall-hung or placed on the floor—with or without ductwork. Cooling capacity: 7.5 tons.

FOR TWO OR MORE FLOORS. Using a minimum of floor space and cubage, and with flexible fan sections, these units are adaptable to larger applications. Fan sections can be installed 6 different ways without altering fan or casing. Cooling capacities: 20, 22.5 and 27 tons.

BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

Phoenix Distributor Sees '60 as Biggest; Large Systems, Heat Pump Growth Cited

PHOENIX, Ariz. — Sales activity in the first quarter gives every indication that 1960 will mark Arizona York Refrigeration Co.'s biggest years, states Alfred Maggs, president of the distributorship for York air conditioning and refrigeration products. Furthermore, he believes the increased application of the industry's products will spread over all the various types of equipment.

For example, in the "big" air conditioning field, which was not too much of a market in Arizona until quite recently, marks the following representative installations either recently completed or in the process of being completed: a 400-ton hermetic "Turbopak" chilled water system now being installed at the Mountain States Telephone & Telegraph building; 200-ton systems in both the First National Bank of Arizona building and a Goldwater Department Store. Recent hotel jobs include the additions to the Safari and the Bagdad.

Larger Restaurants Being 'Zoned with Individual Units'

"We have been doing many commercial restaurants of the larger type," reports Maggs, "zoning them with individual units for the dining room, the cocktail lounge, and the coffee shop areas. Some of these have been done with water-cooled units making use of cooling towers; however, there is a trend today shifting to heat pump units properly sized for the job. Kitchens in most of these restaurants are cooled in the summer by evaporative coolers and heated in the winter by suspended unit heaters or by heating coils in the evaporative cooler ductwork.

Apartment Houses Using Packaged Units

"Apartment house installations are currently being handled primarily by individual packaged units of the York 'Pathfinder' type, either conventional cooling equipment with gas-fired furnaces for heating, or a heat pump system with individual units for each apartment. Some of the apartment house buildings with larger individual apartments are handled by chilled water systems with the fan-coil units and ductwork within the apartments."

In the residential field, says Maggs, a noteworthy trend has been the increased application of heat pumps, and the growing tendency of builders of lower-priced housing to include refrigerated air conditioning in the original cost of the house. Heat pumps had a good workout in the past colder-than-usual Arizona winter, said Maggs, but those systems which provided satisfactory heating through such a season will undoubtedly develop more sales in this and future years.

Arizona York places heavy emphasis on continuing contact with architects, engineers, and general contractors, says Maggs. Direct mail has proved to be the best type of advertising to reach these groups, he says, but for general promotion the distributor uses newspaper, radio, TV spots, and billboard advertising.

Gas Vent Institute Moving to New Offices

CHICAGO — Effective April 28, the offices of the Gas Vent Institute, national industry trade group, will be located at 333 N. Michigan Ave., Chicago 1.

This was announced by Smith, Bucklin & Associates, Inc., institute management firm which succeeded the former secretary-manager, Byrne Marcellus Co. The institute's new telephone number: CEntral 6-0633.

In Homes and Business

Mechanical Cooling Replacing Evaporative Cooling In Riverside

RIVERSIDE, Calif. — This community forms a good example of the type of California area that was slow to adopt mechanically refrigerated air conditioning, but which is now finding that effective cooling is vital not only in business but in comfortable home living.

"People used to think that we had a climate that didn't require air conditioning, or if any relief was needed, it was possible with evaporative coolers," says J. H. Wingate of Wingate's, who has been in the air conditioning field here since the early thirties. "However, in recent years we have not only been having heat waves of two to three weeks' duration with temperatures as high as 115° F., but relative humidities are up also, as high as 40%."

Wingate estimates that the extent to which mechanical cooling is replacing evaporative cooling is about 75% in commercial applications, 15% in manufacturing and industrial installations, and 10 to 15% in residential jobs.

One example of the shifting in attitude was the completion of air conditioning for the public rooms of the world-famed Mission Inn in 1958. Despite its construction (30-ft. walls in some places) and the care taken in landscaping to provide maximum protection from the heat, it was felt desirable to install a 300-ton cooling system. One feature of this job, which Wingate did, was the installation of cooling towers across the street from the Inn, so that inter-connecting piping had to be run through a tunnel.

Another installation of significance is that which has been done for the court house. This building, erected in 1903, has been called the most beautiful structure of its type in California, and is now cooled with air conditioning.

Heat pumps are beginning to find a market in the Riverside area, where they can be used to advantage, Wingate says. One major problem is the supply of skilled installation and service labor, he states, but a Joint Industry Committee, is setting up to prepare a training program.

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GM Steel Tubing serpentines are "profile" checked for close adherence to your specifications. Dimension, flatness, pressure and cleanliness tests insure the reliability for which GM Steel Tubing is noted.

GM STEEL TUBING BY ROCHESTER PRODUCTS

AMERICA'S LARGEST MANUFACTURER OF REFRIGERATION TUBING

Ultraviolet Lamps

How Good Are They for Killing Bacteria, Viruses In Homes?

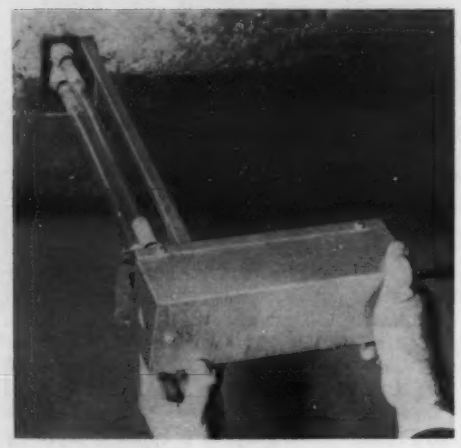


FIG. 1—Tests were made with two WL 782-H-10 Sterilamp ultraviolet tubes on a 100 milli-ampere ballast inserted through a 2 by 3-in. hole in the return air duct of a small home.

BLOOMFIELD, N. J. — How much good will an ultraviolet lamp do in a home?

How effective is it in killing harmful bacteria and viruses? In destroying odors?

Now that ultraviolet units, suitable for installation in home hot-air furnaces, are being sold by a number of manufacturers, these questions become pertinent.

To answer them, tests were recently conducted by Rudolph Nagy, advisory engineer in the research department of Westinghouse Electric Corp. here and Gerald Devitt, bacteriologist of Nutley, N. J.

They concluded that ultraviolet lamps in the intake duct of a warm air furnace will destroy bacteria and odors. They found that two lamps will destroy about 75% of the organisms passing them.

They further found that this lethal radiation is accumulative so that, in recirculated air, a number of short or weak exposures are as effective as a single large exposure, provided that total amount of energy is the same in both instances.

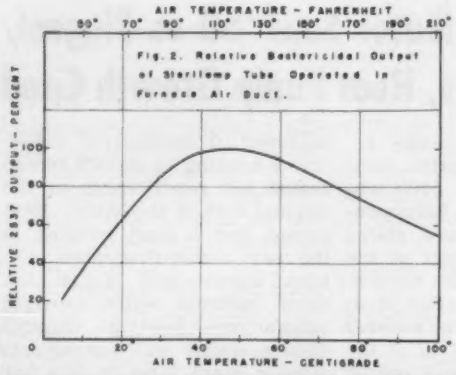


FIG. 2—Chart shows relative bactericidal output of Sterilamp tube operated in the furnace air duct.

For the tests, Nagy and Devitt used the Westinghouse "Sterilamp." The Sterilamp ultraviolet tube is designed to produce a radiation which will destroy all types of molds, bacteria, viruses, and yeasts.

This type of ultraviolet radiation is about 100 to 1,000 times more effective in killing microorganisms than an equal amount of ultraviolet radiation from the sun.

Tests were made with two WL 782-H-10 Sterilamp ultraviolet tubes on a 100 milliampere ballast in a hot air duct of a small home. Total power consumed by the two lamps was 40 watts, Nagy and Devitt declared in reporting their findings. Their report follows:

The total bactericidal ultraviolet output measured as 2537 angstrom radiation was 5.6 watts. The installation required making a 2 by 3-in. hole in the return air duct and inserting the lamps (Fig. 1.)

Why Return Duct Was Chosen

The return air duct was chosen instead of the exhaust duct for several reasons. The temperature of the return air is nearly optimum for the operation of the lamp so that we obtain the maximum output of germicidal radiation. (Fig. 2.)

The air temperature in the exhaust duct may be as high as 170° to 200° F. with the result that the ultraviolet output would be decreased.

The exposure time for the organisms is longer in the return duct because this duct is generally larger in size than the exhaust duct. Consequently, the air would have a lower velocity. The lamp in the return duct is more efficient in producing ozone and, therefore, can more readily oxidize odors.

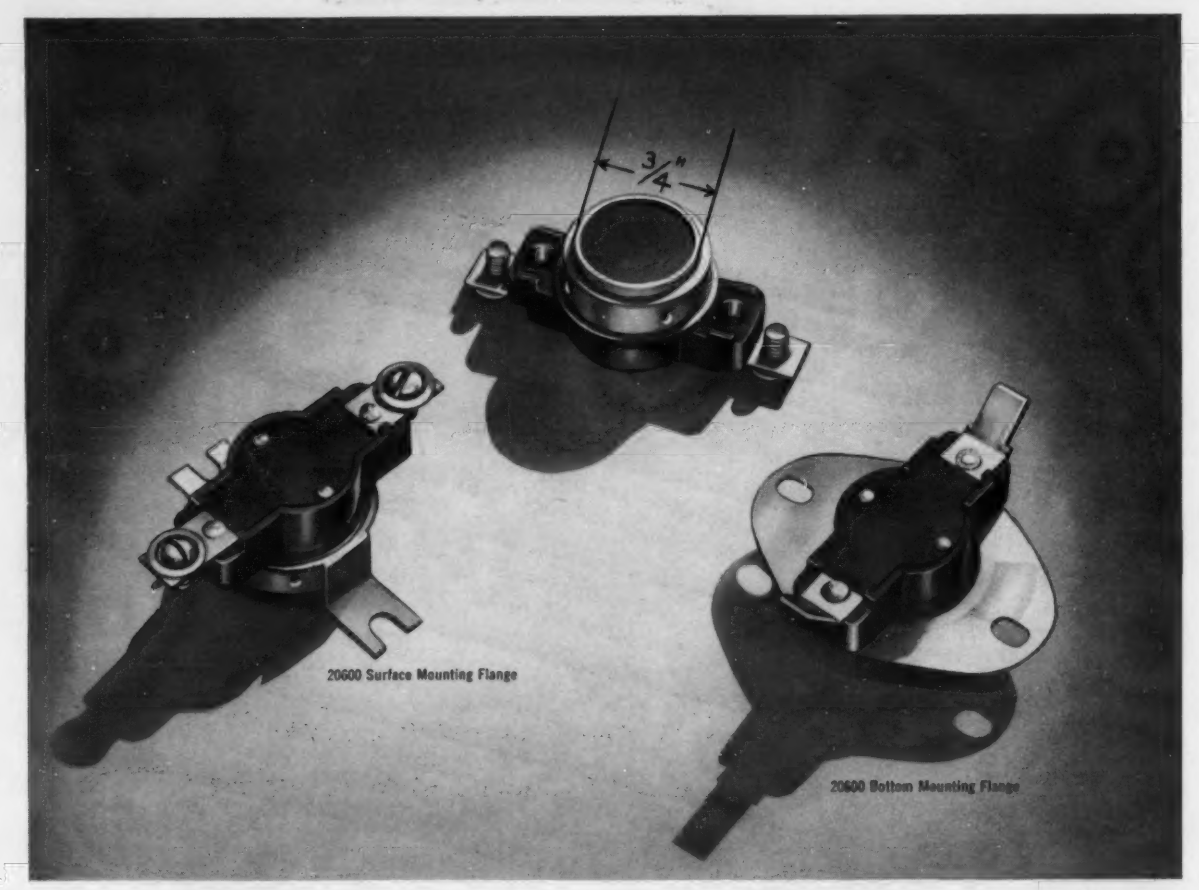
If ozone was generated at the higher temperatures of the exhaust duct it would be spontaneously decomposed by the heat and unavailable for the oxidation of odors.

How Effectiveness Was Determined

To determine the efficacy of the ultraviolet lamps in destroying microorganisms, Escherichia coli, a harmless bacterium, was sprayed into one of the return ducts and collected on Petri plates containing desoxycholate agar.

A Luckiesh-Taylor electrostatic sampler was used to collect the organisms at one of the exhaust grilles. The bacterium E. coli has approximately the same resistance to ultraviolet radiation as most pathogenic organisms (Table 1).

The organisms were grown for 36 hours in lactose broth



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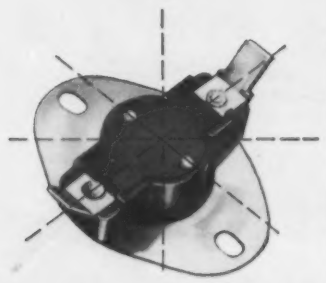

Terminal axis can be positioned with respect to flange axis to provide maximum electrical clearance in mounting.

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Table 1

A comparison of energies of 2537 angstrom radiation to inhibit growth of 90 percent of some pathogenic organisms

Organism	Microwatts-seconds/cm² 2537A Radiation
Escherichia coli	3000
Streptococcus hemolyticus	2160
Streptococcus Viridans	2000
Streptococcus albus	1840
Eberthella typhosa	2140
Corynebacterium diptheriae	3370
B. paratyphosus	3200
Dysentery bacilli	2200
Influenza virus	3400

Table 2

Efficacy of the STERILAMP ultraviolet tubes in destroying E. coli organisms in a hot-air duct

Test No.	Sterilamp	Bacteria Sprayer	Bacteria Count	Percent Kill
a	Lamp "on"	No spray	None	..
b	Lamp "on"	Spray "on"	2	98.5
c	Lamp "off"	Spray "on"	135	..
d	Lamp "on"	Spray "on"	5	96.3
e	Lamp "on"	No spray	1	99.3
f	Lamp "on"	No spray	None	100.0

Table 3

Test No.	Sterilamp	Spray	Filter	Bacteria Count	Percent Kill
a	Lamp "off"	Spray "on"	out	381	None
b	Lamp "on"	Spray "on"	out	98	74.2
c	Lamp "off"	Spray "on"	in	282	None
d	Lamp "on"	Spray "on"	in	43	84.8
e	Lamp "on"	Spray "off"	in	8	97.2
f	Lamp "on"	Spray "off"	in	1	99.65
a^1	Lamp "on"	None	in	None	..
b^1	Lamp "off"	Spray "on"	out	513	None
c^1	Lamp "on"	Spray "on"	out	125	75.7
d^1	Lamp "off"	Spray "on"	in	317	None
e^1	Lamp "on"	Spray "on"	in	98	69.0
f^1	Lamp "on"	Spray "off"	in	18	94.3
g^1	Lamp "on"	Spray "off"	in	6	98.1

and diluted with equal amounts of distilled water before spraying. The sprayer was a glass jet operated by an electric air pump.

In the majority of these tests the sprayer was on continuously and five-minute samples were taken with the lamps "on" and then taken with the lamps "off." The E. coli bacteria collected on the Petri plates were incubated at 35° C. for 48 hours and then counted.

In the first test (Table 2) the furnace heater and circulating fan were on throughout the entire period. There was a five-minute wait after each sample excepting between samples "d" and "e" and "e" and "f." Samples "e" and "f" were taken in succession to determine the rate of clean-up of the organisms from the room.

The test was repeated since it did not truly represent actual operating conditions. The heater was on throughout the entire test so that the organisms were exposed to a much higher temperature than normally found in the furnace.

This would result in destroying a greater number of organisms than if ultraviolet radiation alone was used. Therefore, the next tests were made in a cold furnace with only the circulating fan operating. These tests results are given in Table 3.

Test Results

The results show that about 75% of the E. coli organisms passing once by the ultraviolet lamps are destroyed. It has been shown by many experiments that those organisms exposed to ultraviolet radiation and not killed, are injured and do not multiply as rapidly.

In a normal home, the air is recirculated and the organisms may be irradiated a number of times. This lethal radiation is accumulative so that a number of short or weak exposures are as effective as a single large exposure providing that the total amount of energy is the same in both instances.

The measurement of odor or the rate of oxidation of odors by ozone is a difficult procedure especially if attempted in a home. Fortunately there are laboratory tests and many installations using ultraviolet tubes to oxidize odors from which we can draw conclusions.

As an example, the ultraviolet tube has been used in meat boxes and tenderizing rooms to destroy meat odors. There are large installations of lamps in hospitals and office buildings to destroy body and other types of odors.

The Westinghouse "Odorout®" lamp, producing a polymer of oxygen known as ozone, has been used in homes to destroy cooking and tobacco odors. Laboratory tests also have shown that many industrial odors are readily oxidized by ozone.

There is no doubt, therefore, that the Sterilamp ultraviolet tube in the hot-air duct will also destroy odors as they pass by the lamp and mix with the ozone.

There is one main difference between the examples cited on the use of the ultraviolet tube in large air ducts and in the hot-air furnace.

Generally, a controlled amount of ozone generated by the lamps is blown into the rooms. This amount is of the order of 0.05 ppm/wt or of the same order of magnitude as found in country air.

In the hot-air duct, the ultraviolet tube would produce the same amount of ozone as in an air conditioning system, but most of the ozone would be decomposed on the hot furnace surfaces and by the hot air. The oxidation of odors would occur mainly in the ducts and in the furnace.

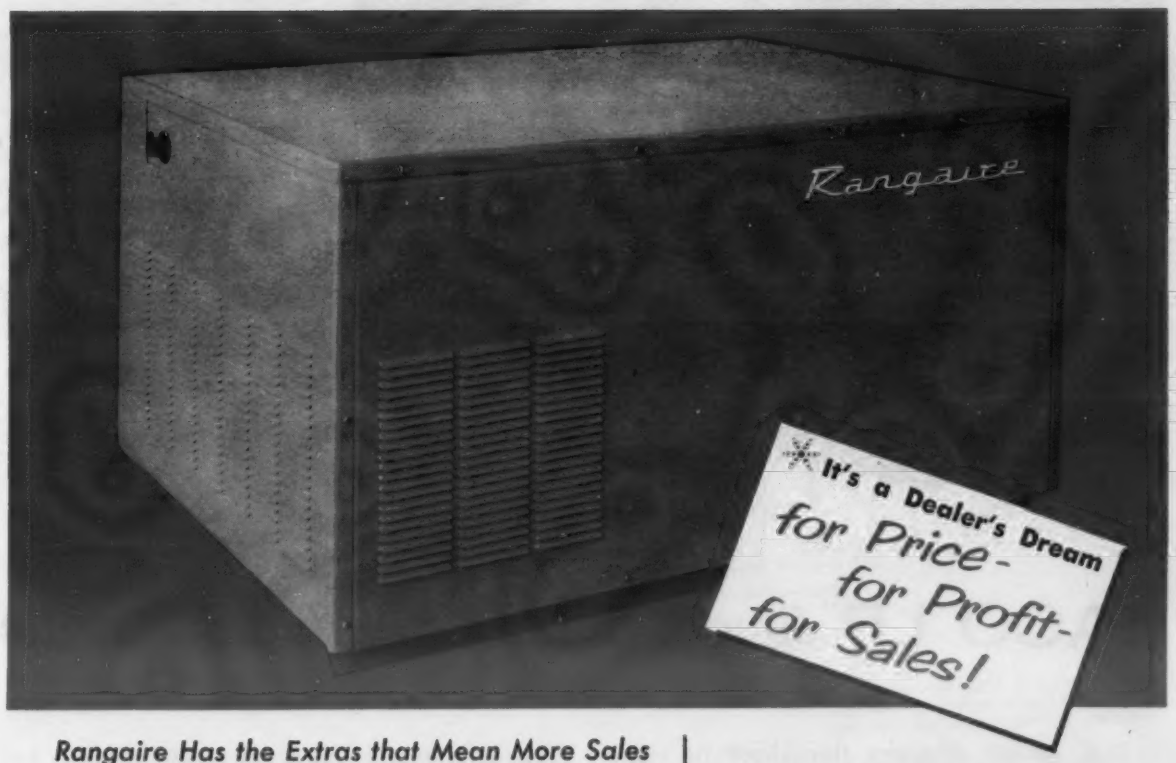
The conclusion of this investigation is that an ultraviolet lamp in the intake duct will destroy bacteria and odors. Two WL 782-H-10 Sterilamp ultraviolet tubes will destroy approximately 75% of the organisms as they pass the lamp.

After the completion of the above tests a new Sterilamp tube, G 10-T-5½-H was developed which has an ultraviolet output equivalent to that of two WL 782-10-H Sterilamp tubes. The new high intensity lamp would be more adaptable to home furnace applications.

Where Competition's Hot...

Cool 'em with

Rangaire



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In the Southland

State, Municipal Buildings Using More On-the-Job, Built-Up Systems, D-H Finds

LOS ANGELES — Recent orderboard activity at Drayer-Hanson has involved air conditioning equipment for such diverse facilities as state and municipal buildings, air terminals, the Mexico City Medical Center, Cape Canaveral, and historic Fort Sam Houston.

A report from the Crane Co. division says that a preference by planners of state and municipal buildings, and public utilities, for new construction employing on-job "built-up" air conditioning systems, rather than "packaged" or system-type units, seems to be indicated of late in The Southland.

Recent installations of D-H cooling/heating coil products have been called for by engineers and air conditioning contractors in a variety of applications in this category, Drayer-Hanson said.

Major jobs being equipped with coil components are a new Beverly Hills sub-office of Pacific Telephone & Telegraph; the new West Valley police station, Reseda; and a new science building on the campus of San Fernando Valley State college, Northridge. The latter will utilize 24 heating and cooling coils on-job.

One of the largest single jobs calling for coils, in recent years, is Drayer's installation at the new Hall of Administration, County of Los Angeles, where 136 coils serve as the nucleus of the year-round air conditioning system, it was pointed out.

Another major coil job was recently completed in Oakland for the State Office Building, Dept. of Finance, California.

Missile and Space Program Stimulates Southland Market

Stating that product diversification of key aircraft firms into activities concerned with missile and space programs "continues unabated in The Southland," Drayer-Hanson's Irvin Secord noted particular emphasis at North American Aviation, Downey.

The Autonetics facility there recently began operation of new Building #4 — the Autonavigator Production building. The medium for the air handling phase for complete plant air conditioning is six Drayer-Hanson multizone type air conditioners, and other auxiliary single-zoned systems and air exhausters.

(Detailed story on air conditioning for the Autonavigator Production building appears on pages 14 and 15 of this issue.)

Coming up was another new facility at Autonetics, the Industrial Control Div. building—the Computers/Controls building. The air-handling phases there will be vested with eight D-H multizone types, and air exhauster.

Secord also reported that Drayer-Hanson will supply the air handling equipment phase of the new Fresno (Calif.) Air Terminal. Seven heavy single-zone and one four-zone multizone type air conditioning units will do the chore.

This project is similar in scope to the Greater Bakersfield airport facility which Drayer-Hanson equipped some two years back, Secord noted.

As part of the nationwide expansion of civilian and military air field construction, the Air Naval Training Station, Grand Prairie, Texas, was scheduled to get a series of Drayer's individual-room, low-headroom blower-fan-filter units.

Other recently projects now utilizing various types of Drayer's air conditioning equipment include the new Bradenton Airport, Sarasota, Fla.; Municipal Airport, Wichita, Kan.; Air National Guard Hanger, Ellington Field, Texas; and Abilene (Texas) Air Force Base.

The Research Aero Lab., Edwards Air Force Base, Calif., and Air Traffic Control, Miramar, Calif., also swell Drayer's participation in this type of construction.

Mexico City Medical Center

Reporting that modernization of the giant Mexico City Medical Center complex continues, Secord indicated that his firm's foreign representatives have negotiated several new contracts for sizable coil orders for many phases of that activity.

Involved are some 43 coils—the core of new heating plants serving such buildings within the central core as Examination building, Maternity and Gynecology building, the Surgical Theatre, and Medical, Surgical & Specialists Equipment building. Also involved in the latter are four D-H ceiling-suspended refrigeration units.

Drayer-Hanson noted, too, that it is a prime supplier to the missile launching centers at Canaveral in Florida and Vandenberg in California. Newest business from the Florida facility is the air conditioning phase of the U. S. Navy's FY-60 Navy FBM.

"To be set at Equipment Maintenance building and Operation Control building (both of which key to total air conditioning) are D-H's floor and ceiling-mounted air handlers," the manufacturer said.

At Fort Sam Houston, Building #1000 — now Brooke Medical hospital — was being set with a brace of D-H individual-room air conditioning equipment. Concealed overhead, units will serve operating room areas. The installation follows one of D-H room-by-room air conditioners made at Fort Sam Houston some time back.

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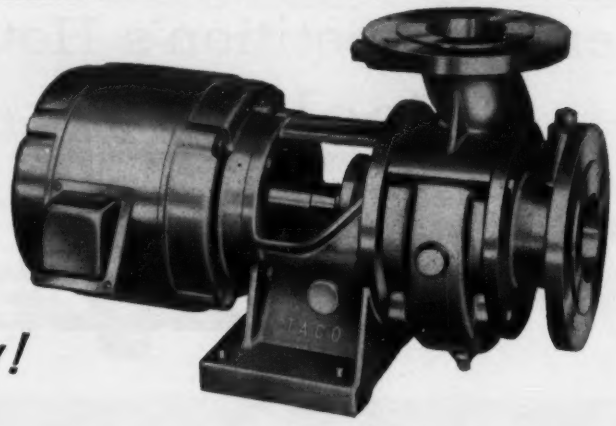

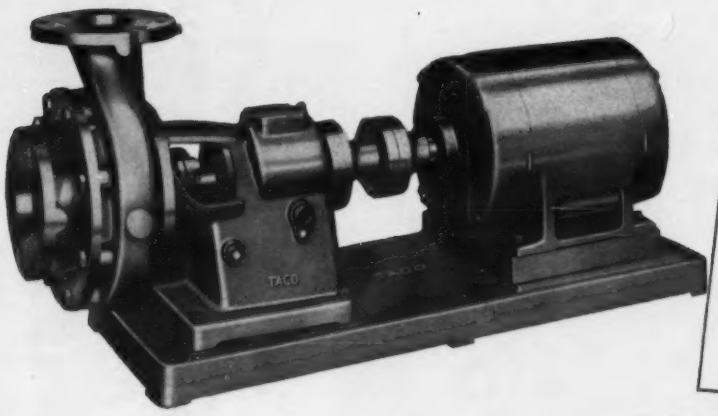

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High overall efficiency throughout its entire usable range is a basic characteristic of every TACO "LP" Series Pump. And the *complete selection* of sizes available gives *complete* coverage . . . permits each pump to be precisely tailored to the installation. As a result, you're *certain* of better performance when you specify an "LP" . . . and can often save on motor cost and power consumption.

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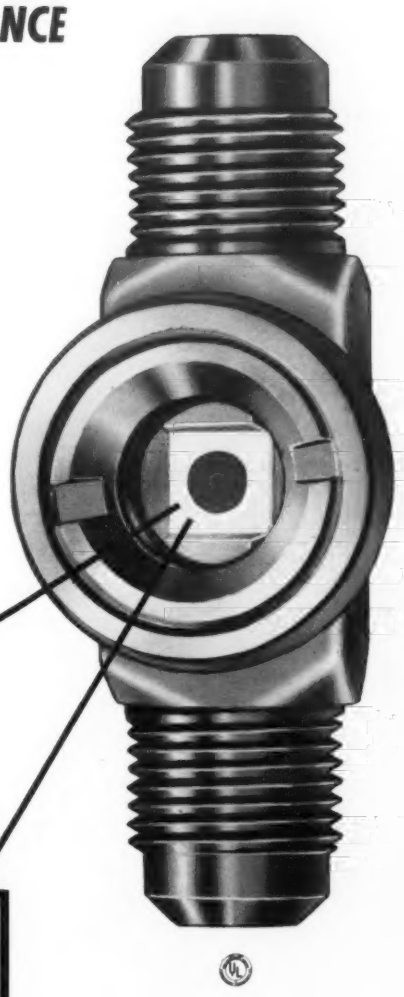
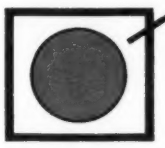
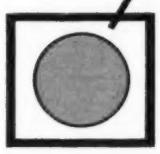




Round blue spot shows the system is full and dry.



Round pink spot shows that moisture is present.*

Color spot indicator loses its shape when refrigerant level drops.

*When the color spot is pink it's time to install a Drymaster Filter-Drier . . . avoid freeze-ups, acid, sludge and corrosion problems.

A heavy duty, safety-seal brass cap keeps the sight port clean and protects the unit from dirt and damage. The cap is knurled for easy tightening and removal by hand.

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DRYMASTER'S CENTER FILTER TUBE, over which is fitted a super-fine monel metal sleeve, is a combination that acts as a doubly effective safeguard against dirt and sludge; removes even micron-size foreign particles.

DRYMASTER'S INLET DISTRIBUTION DISC disperses refrigerant evenly throughout entire filter block desiccant. Combined area of openings in the perforated disc is carefully calculated to prevent pressure drop.

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Won't Dismiss Suit Against Five Dairies

SAN FRANCISCO — Federal Judge Albert C. Wollenberg has denied the motion by five major dairies and a subsidiary of one of them for dismissal of a $2,355,000 treble-damage anti-trust suit filed against them by 11 independent California and Nevada dairies.

The defendants had claimed that the court lacks jurisdiction because no anti-trust violations are shown in the complaint, which they called an "impenetrable tangle of complexity."

Among other things, plaintiffs accuse defendants of furnishing equipment to retailers and financing construction or refurbishing, in return for exclusive handling or preferential treatment of their products.

Recold To Expand West Coast Plant

LOS ANGELES—Plans for a new 49,000-sq. ft. addition to Recold Corp.'s West Coast factory were announced by H. T. "Hy" Jarvis, president.

The new concrete and steel structure will be located adjacent to the present facilities at 7250 E. Slauson Ave. here, and will bring the total area of the building to almost 170,000 sq. ft., including offices and warehouses.

The new structure, which will measure approximately 100 ft. wide and 500 ft. long, will be built along the west side of the existing factory.

"This additional production space will be consolidated with the present factory by the removal of the west wall of the existing building and the relocation of equipment throughout the entire plant to permit 'straight-line' type production wherever practical," it was pointed out. "This general revamping will mean added efficiency and productivity, through the application of modern production techniques."

Jarvis anticipates that the modernization plans and additions should double Recold's present production capacity.

erect ductwork easily with
STANDING "S" CLEATS

PRICE PER 100 FEET – F.O.B. SPRINGFIELD, MO.

GAUGE	100-999 FT.	1000-4999 FT.	5000 FT. OR MORE	EST. WT./ FT.
26	$7.30	$6.20	$5.90	.453
24	9.60	7.90	7.40	.578
22	10.50	9.00	8.50	.703

GALVANIZED – 10 FT. LENGTHS ONLY

PM

PAUL MUELLER COMPANY
P.O. BOX 150 – SPRINGFIELD, MISSOURI

Bragg Temp-Control Formed In Wichita

WICHITA, Kan. — Formation of Bragg Temp-Control, Inc. to engineer and install air conditioning and heating products in Wichita has been announced recently.

President of the new firm is C. W. Bragg, who for 11 years owned and operated the C. W. Bragg Co., a local heating and air conditioning firm.

R. Harry Dawson is vice president. He was in the air conditioning and electrical contracting business, according to the announcement.

James P. Kelley, Jr., secretary-treasurer, had been a sales engineer for Airtemp Div.

The new firm is a dealer for Airtemp air conditioning and heating products, Walton humidifiers, and other products.

Another new firm, Bragg Conditioned-Air Supply, Inc., will distribute air conditioning and heating products and accessories through dealers in southern Kansas and northern Oklahoma. Bragg, Dawson, and Kelley are also the officers of this firm.

Miami Products Opens West Coast Office

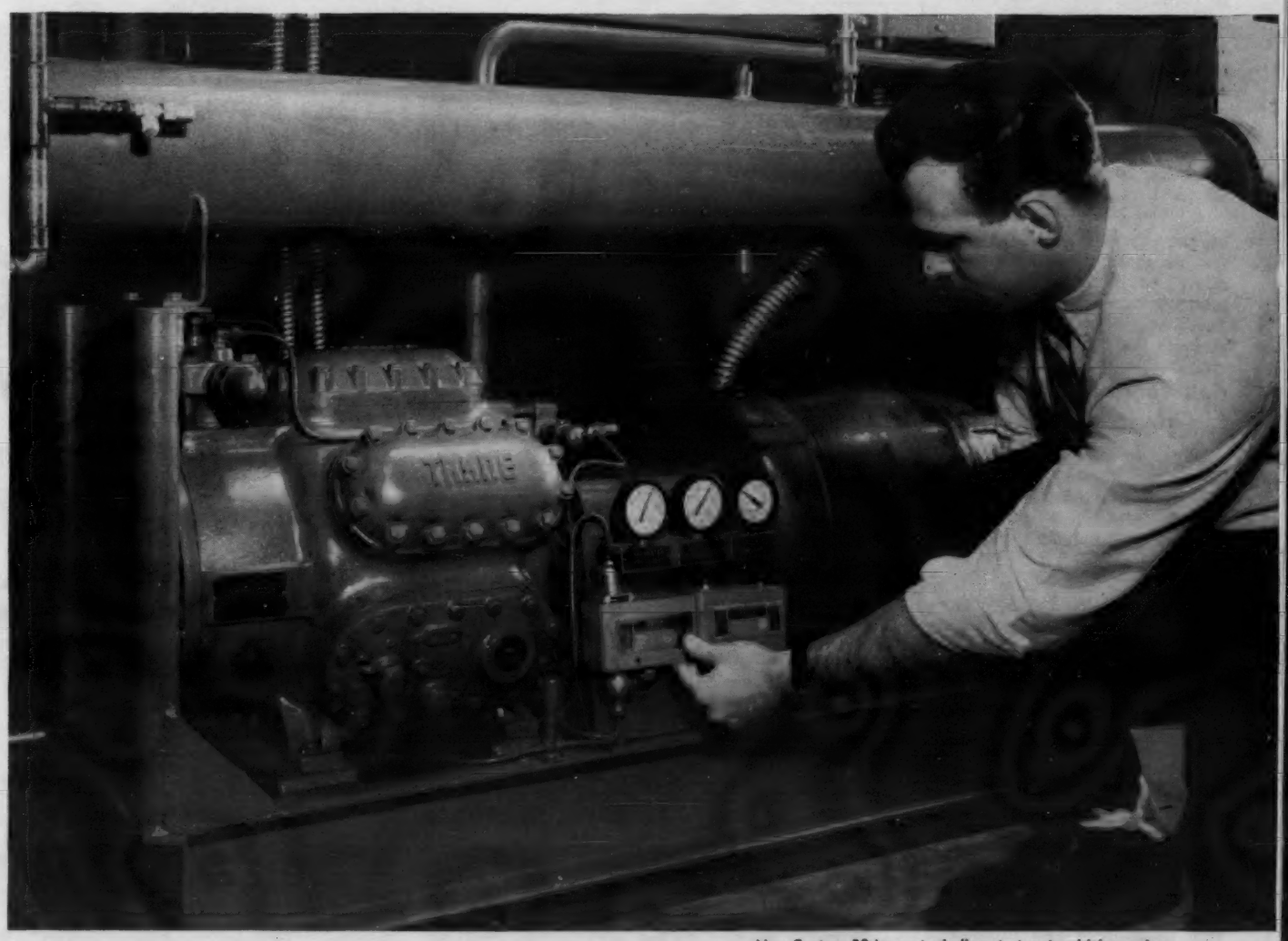
MIAMI, Okla.—Miami Products, Inc., manufacturer of "Miami Air" furnaces, air conditioning, and heat pumps, has expanded its West Coast marketing facilities with the establishment of a warehouse and sales office at 1556 Embassy St., Anaheim, Calif.

Bill Wilmoth has been appointed branch manager. Bob and Jack Botheras, who were formerly district sales managers in Missouri, have been appointed western sales managers. These two brothers will share the responsibilities of their position.

L. K. Newell, president, said this latest market move "is dictated by the fast-growing demand for heat pumps and central air conditioning in the western market."

Merfeld Appointed

CEDAR RAPIDS, Iowa—The Heating & Air Conditioning Div. of Century Engineering Corp. has announced the appointment of Michael J. "Mike" Merfeld as assistant sales manager.



New Century 30 hp part-winding start motor driving reciprocating compressor. Compressor is part of an air conditioning system in an industrial test and research laboratory.

New Century Electric motor for part-winding start

Problem: power company restrictions limit inrush current . . . a part-winding start motor is called for, but . . . acceleration must be smooth and quiet with no risk of stalling at two-thirds of full speed.

Answer: the new Century part-winding start motor.

A special winding scheme makes this performance possible. So now you can have part-winding start, dependable power and smooth acceleration all in the same motor. Century part-winding motors provide the most economical and dependable way of starting equipment such as fans, blowers, centrifugal pumps and compressors, as well as reciprocating compressors with unloading valves (like the one shown here). They are available in 20 to 150 hp sizes and in speeds of 1200 and 1800 rpm.

Why do Century Electric part-winding motors provide reliable power? Here are a few of the reasons: windings are dipped and baked with several coats of a high temperature synthetic varnish which protect against oil fumes, mild acids, dust and grit . . . rotors are dynamically balanced so motors run smoothly and quietly . . . rugged cast iron frame gives long life and reduces noise level . . . coils are insulated with a tough polyvinyl resin.

For more information on Century's complete line of motors (1/20 to 400 hp) please contact your local Century Electric Sales Office or Authorized Distributor.

CENTURY ELECTRIC COMPANY
St. Louis 3, Missouri *Offices and Stock Points in Principal Cities*
Century
60-6

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

educational profession more attractive to the many more intellectuals who should embrace it.

Furthermore, the three-semester three-year program offers these extra boons:

(a) College graduates face one-to-three years of military service after earning their degrees. These "lost years" will be foreshortened by an accelerated collegiate program.

(b) Candidates for post-graduate degrees (medicine, law, teaching, etc.) won't be discouraged from going ahead into those professions, because seven or eight years of advanced schooling could be cut to five or six.

(c) There'll be a filter-down of this three-year three-semester program to high schools, many of which already are laboring under two shifts per day, overcrowded classrooms, etc.

Call to Public-Spirited Citizens!

Sure, air conditioning is the key to workability of this idea. Obviously our industry will gain by promoting it. But our endeavors in its behalf won't be *primarily* selfish.

Remember: we will be selling Better Education for More Young People. Air conditioning merely makes it possible, feasible, and palatable.

Successful contractors and dealers and public utility executives are civic POWERS in their localities. They spearhead charity fund-raising drives, are church deacons, PTA, and Boy Scout leaders. Many of them serve on Save-Our-Schools committees.

Even more, industry association executives are in key position to ennoble and promote a marvelous (helps everybody) program of this sort.

Subscribers' reactions to this idea are desired. Do we have too big a bear by the tail to swing?

Add Newspaper Boners

Jill St. John, hesitating for months, finally wed Lance Reventlow, heir to Barbara Hutton's millions, while Yul Brynner, Rhonda Fleming, and Debra Paget did likewise. — *Detroit News.*

Ike Says Nixon Can't Stand Pat.—*Macon News.*

Nut Group Honors Three.—*Lansing State Journal.*

The office force in the building did not know about the explosion until it occurred.—*Spearman* (Ala.) *Reporter.*

Priest Turns Holy Roller As His Car Turns Turtle.—*Iron River* (Mich.) *News.*

Girl Becomes Methodist After Delicate Operation. — *Bergen* (N. J.) *Evening Record.*

Toilet Tissue Chief Gives Warning On. — *Birmingham* (Ala). *Post-Herald.*

Ann Landers Wouldn't Have a Job!

Young female students at Mount Holyoke college (long ago, of course) were required to abide by these rules:

"Every member of this school shall walk at least a mile every day, unless a freshet, earthquake, or some other calamity prevents.

"No cosmetics, perfumeries, or fancy soap will be allowed.

"No member of this school may have any male acquaintances unless they are retired missionaries or adult agents of some benevolent society.

"No member of this institution shall tarry before the mirror more than three consecutive minutes.

"No member of this school shall devote more than one hour each week to miscellaneous reading.

"The *Atlantic Monthly,* Shakespeare, Scott's novels, Robinson Crusoe, and other immoral works are strictly forbidden.

"The *Boston Recorder, Missionary Herald,* and *Washington's Farewell Address* are recommended for light reading."

"All lights must be extinguished at 9 p.m."

All parents please note.

Last Laughs

"Dear Sir," a firm in India wrote to a past-due account, "unless you pay the rupees you owe us within the fortnight, we shall take such steps as will cause you the utmost damned astonishment."

With gestures Jimmy recited an exciting adventure encountered on a family vacation trip. "There we were, surrounded by Indians. . . ."

"What REALLY happened THEN, Jimmy?" prompted his seventh-grade teacher.

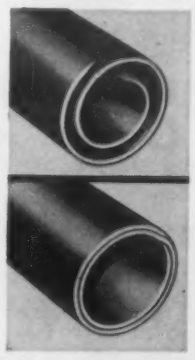
"We bought three blankets and a decorated jug for Christmas presents."

Upon reading statistics on the enormous increase of women workers, Chief Sitting Down observed:

"White man finally learns Indian no fool."

And then there was the Texan who bought his dog a boy.

There's almost no limit to the things Bundy can mass-fabricate



Bundyweld is the only tubing double-walled from a single copper-plated *steel* strip, metallurgically bonded through 360° of wall contact for amazing strength, versatility.

Bundyweld is lightweight, uniformly smooth, easily fabricated. It's remarkably resistant to vibration fatigue; has unusually high bursting strength. Sizes up to ½" O.D.

Maybe your tubing problems don't run to animal shapes, but it's likely that you can benefit from Bundy's experience in mass-fabricating complex tubing parts. Here's why:

Precision bending: Bundy-developed machines turn out parts to exacting customer specifications . . . *with mass-fabricating savings.*

Great strength: Your component will be fabricated from Bundyweld®, the copper-brazed steel tubing that's *double-walled* from a single steel strip. Bundyweld's long history of leakproof performance has made it the safety standard of the refrigeration industry.

Expert design service: You can call on our engineering staff at any time to help with the design of your product. We may be able to point out short cuts that save you money without compromising engineering standards. Covered by Government Spec. MIL-T-3520, Type III.

Next time you have a tubing problem, better call Bundy *first.* Phone, write, or call Bundy Tubing Company, Detroit 14, Michigan.

G-E Warehouse Uses Room Air Conditioners To Keep IBM Computers Operating

LOUISVILLE, Ky.—The increasing application of computers to manufacturing and warehousing operations has highlighted one of the interesting differences between man and machine.

When temperatures and humidity rise, man may complain, but he keeps on working. The computer doesn't; it just stages a devastatingly quiet sit-down strike. Thus, a method for controlling temperature and humidity must be assured when data processing machinery is installed.

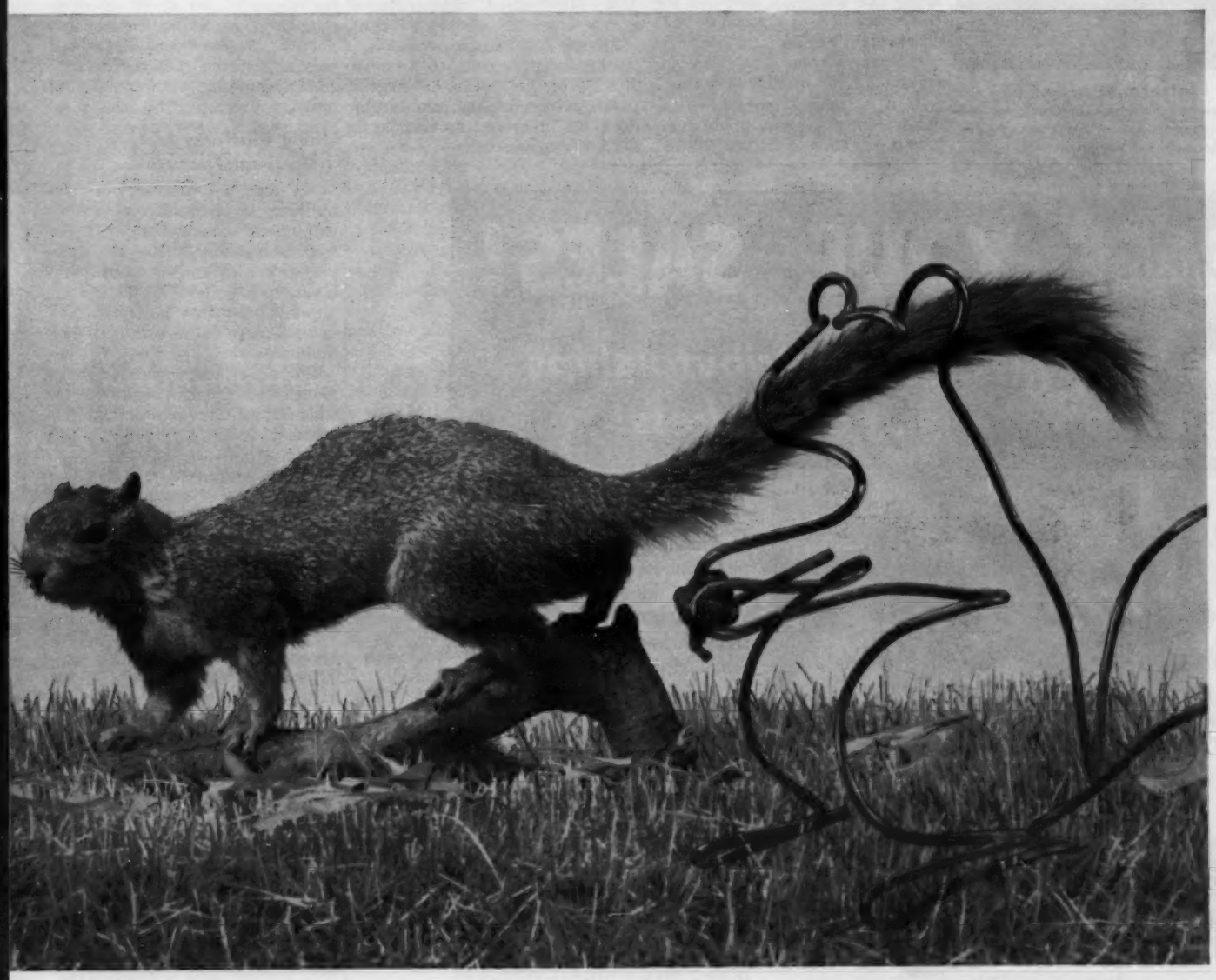
When General Electric's Central Parts Warehouse at Zanesville, Ohio, ordered its IBM "Ramac" computer, the data processing department looked no further than home for cooling equipment.

EIGHT GENERAL ELECTRIC 1-hp. room air conditioners maintain low temperature and humidity levels in data processing room of company's Central Parts warehouse at Zanesville, Ohio. Complex IBM machinery helps department keep an automatic perpetual inventory of over 34,000 major appliance parts.

From the company's room air conditioner department in Louisville, they ordered eight 1-hp. "Thinline" window units to keep the data processing room at the required temperature level.

With no engineering modifications, the eight standard room units have, since their installation on Jan. 27, 1958, been doing an outstanding job of temperature and humidity control for the machinery which helps maintain an automatic perpetual inventory of over 34,000 parts for General Electric major appliances, according to G-E.

No down time due to overheating has been reported on any of the machinery, which includes in addition to the Ramac, an IBM 407 accounting machine, IBM 370 printer, inquiry consol, IBM 382 tape reader, and IBM card puncher, G-E said.



Whirlpool Room Unit Sales Up 168% for First Quarter

CHICAGO—Whirlpool Corp.'s factory unit sales of room air conditioners for the first quarter were up 168% over the year-ago period.

This was reported by Board Chairman Elisha Gray II in telling stockholders at the annual meeting that despite sharply increased sales competition in the first quarter of 1960, Whirlpool will show a moderate increase in total sales while earnings will reflect a modest decline by comparison with the same period of 1959.

Before the end of 1960, Gray predicted, Whirlpool should benefit from a levelling out of start-up costs on the new lines of "RCA Whirlpool" ranges and gas refrigerators and these appliances should be appreciably closer to a breakeven position.

He also noted that a recently-developed hotel-motel ice maker for individual guest rooms will be in production soon.

Kirby Gets Newly Created Markets Post at Airtemp

DAYTON—Thomas W. Kirby has been named to the newly-created position of special markets manager at Airtemp Div. of Chrysler Corp.

T. W. Kirby

Vice President of Sales Joseph B. Ogden said Kirby's duties would include direction of Chrysler sales in the export, automotive, government, contract, national account, industrial, and builder areas.

"Our sales are increasing in these fields and call for the specialized, concentrated direction of a man experienced in air conditioning and heating."

Kirby had been president and general manager of an independent television and appliance distributing firm in Louisville, Ky. for the past seven years. From 1945 through 1953, he was district representative and division manager for Philco Corp.

Cutaway shows position of strainer in dryer tube.

"11 inches of life insurance" . . . that's how Hotpoint describes this refrigeration dryer tube. Filled with synthetic zeolite, it absorbs the slightest trace of moisture to protect the refrigeration system from failure. The tube is made from ⅜" O.D. x .028 Bundyweld. One end is reduced slightly for silver soldering, while the other is reduced to .080 I.D. in less than ⅝".

There's no substitute for the original

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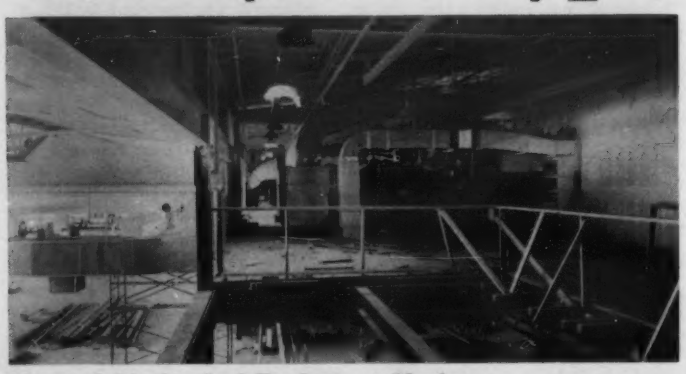
Filtration Removes 99.97% of Dust

Dust-Free Area In Autonavigator Plant Holds Temperature of ½° Plus or Minus



Elevated Mechanical Equipment Platform is one of the most important design factors in North American Aviation, Inc.'s new autonavigator production building. It gives company maximum floor utilization for production processes and provides easy access for servicing equipment.

DOWNEY, Calif.—One of the largest dust-free production areas in the country has been built into the new $2.5 million autonavigator production building for Autonetics, a division of North American Aviation, Inc., here.

The 24,000-sq. ft. area is claimed to be the closest to perfection of any of the four such areas the company employs for the assembly of precision-built electromechanical, hydraulic components, and precision instruments for quality control.

In it a precisely controlled air conditioning system holds temperatures to a constant 70° F. plus or minus ½° with a relative humidity not to exceed 45%. If desired, temperatures can be raised to 80° F. without changing the relative humidity.

Filtration is said to remove 99.97% of dust with the largest particles remaining no larger than 0.2 micron. A micron is 1/25,000 of an inch.

Allowing Direct Duct Runs to areas to be supplied without over and under ducting is another advantage gained from elevated utility platform seen at right in this construction view.

Actually the entire 201,600-sq. ft. plant is air conditioned except for about 15,000 sq. ft. of shipping and receiving area. This portion of the plant is heated only by three Drayer-Hanson AM212 heating and ventilating units.

Utility Platform Is Unusual Feature

An unusual feature of the building is that all mechanical equipment except the large refrigerating machines, air compressors, vacuum machines, turbines, and boilers is located on an elevated utility platform that extends across the center of the building.

For about three-fourths of its length, the platform is 30 ft. wide. For the remaining distance, it is 60 ft. wide.

Sam Findleton, project engineer for Autonetics, termed the utility platform one of the most important design factors in the plant. It gives the company maximum floor utilization for production processes and provides easy access for servicing equipment.

Mounted on the platform are all 11 of the air handling units used to air condition the plant. Two serve the dust-free area and nine the normal production area.

Platform Permits Direct Run of All Ductwork

The elevated platform "permits a direct run of all ductwork to the areas to be supplied with no over and under ducting," Findleton pointed out.

"The arrangement of the two dust-free air handling units is such that they are interconnected so that, in case of breakdown, one unit has sufficient capacity to pressurize the entire area," he added.

All air handling units to normal air conditioned areas are multi-zone.

The two Drayer-Hanson units serving the dust-free area have 21,000 c.f.m. capacity at 6 in. static pressure. All others are rated at an average of 30,000 c.f.m. at 2 in. s.p.

All ductwork in the dust-free area is aluminum to eliminate scaling.

Recirculated, prefiltered air to the dust-free area passes through a Cambridge "Aerosolve" filter to remove larger dust particles and then through a Cambridge "Absolute" filter to remove dust particles down to 0.2 micron size.

Criteria for the dust-free area is 10,000 particles per cu. ft. maximum with all particles of 0.3 micron or larger being counted by use of the Bausch & Lomb method.

William C. Hsu, project mechanical engineer for Bechtel

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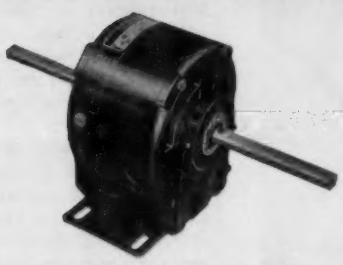
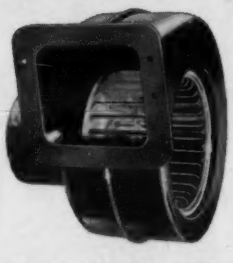


air conditioning replacement motor



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Is one in my area still available?

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DUST FREE AREAS such as this where temperature is controlled within plus or minus ½° F. and humidity is regulated within 2% constancy are used for assembling Autonetics' high precision inertial navigation system components.

Corp., which designed the building, pointed out that static pressure dampers were used in the supply units to compensate for the pressure drop increase in the absolute filters when dust loading begins to build up.

For humidity control, a reheat system is employed with the reheat coil spotted as close to the room as possible to reduce time lag required.

The dust-free area is divided into four assembly areas, final test area, supervisory office, blueprint study room, parts wash, personnel cleaning area, locker room, and reception lobby, all connected by corridors.

Cleaned air enters the area through Pyle-National "Multivent" ceiling diffusers in each room. Hsu pointed out that the diffusers supply 1½ air changes per minute with no perceptible draft within the room. Pattern of air distribution is such that air turbulence at working level is kept to a minimum.

Hsu said, "Tuttle & Bailey Aerovane T78 return registers were used along the four sides of the room 6 in. above the floor to provide a uniflow pattern from ceiling to floor.

"The system is balanced so that air will always flow from the dust-free assembly rooms to the dust-free corridors, and from them to the normal air conditioned areas. This prevents infiltration of dust particles."

A static pressure control device and alarm was installed to maintain higher static pressure in the dust-free area.

Because temperature had to be controlled to plus or minus ½° F. across the room, Minneapolis-Honeywell electronic thermostats coupled together with pneumatic valves on the reheat coil were selected.

The electronic thermostat gives instantaneous response to room temperature variation and operates the pneumatic three-way control valve on the reheat hot water coil.

When relative humidity of any zone rises above 45%, the humidistat will override all thermostats and control the three-way valve at the chilled water coil to obtain desirable dewpoint of air leaving the coil.

The zone thermostat then will modulate the reheat coil to maintain proper zone control.

A multipoint electric temperature recorder with strip chart for each air supply unit records zone temperature in sequence, providing a check for all thermostats and a basis for any correction required.

Air handling units for other sections of the plant must maintain 75° F. temperature at 90° F. d.b. and 70° F. w.b. with a plus or minus 5° F. differential. No humidity control is maintained. Air is filtered through Farr mechanical filters.

Air is delivered to conditioned spaces through Titus ceiling diffusers Series 200. Return air registers are Tuttle & Bailey Aerovane type T88 ceiling returns.

Refrigeration plant consists of three Worthington hermetic centrifugal water chillers, two of 275 tons capacity and the other of 445 tons capacity. Chillers are equipped with economizer and capacity control ranging from 10 to 100%.

Chiller water enters at 50° F. and leaves at 40° F. Condenser water enters at 80° F. and leaves at 90° F.

A single four-cell Pritchard cooling tower of 1,000 tons capacity is located on the roof.

Cooling load for the building is based on normal heat gain due to indoor and outdoor temperature differential, electric power and lighting load at an average of 8 watts per sq. ft. of floor, and four complete air changes per hour of outside air.

Two Cleaver-Brooks packaged boilers of 4,180,000 B.t.u.h. output each supply hot water.

Bendix Aviation Div. Offering Electro-Magnetic Clutches, Brakes

NEW YORK CITY—A new product line of electro-magnetic clutches and brakes used in a wide range of industrial applications, including air conditioning units, will be manufactured by the Eclipse Machine division of Bendix Aviation Corp.

The new line, called the Bendix "ELMAG," is scheduled to be placed in production immediately, according to M. P. Whitney, general manager of the Elmira division. Bendix purchased the line for an undisclosed sum from the ELMAG division of McCauley Industrial Corp., Dayton, which has produced and sold the devices for the past two years.

The purchase includes tools, patents, goodwill, and a license agreement with the German manufacturer of electro-magnet clutches—Maschinenfabrik Stromag GmbH, Unna Westfalen, Western Germany.

The Bendix division has plans to expand the line of clutches that have been used successfully in both Europe and the United States, Whitney said. The devices will be sold through manufacturer sales agents in the United States and Canada.

Dr. Walter Rudisch, who assisted in the development of the clutch in Germany and has been vice president of McCauley, has joined the staff of the division as chief engineer-clutches.

There are two basic types of electro-magnetic clutches in the line—a multiple disc type and a toothed type. Either type can operate dry or in oil.

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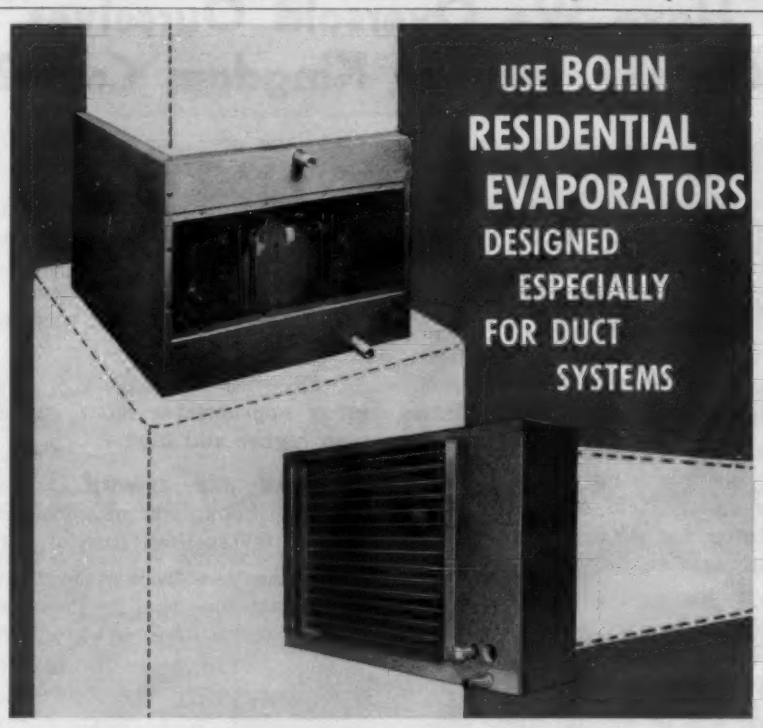

Provide predictable performance... they're rated at ASRE conditions

BAV unit for vertical installations

Same unit mounts *above* or *below* furnace. Two galvanized steel drain pans permit mounting in "A" or "V" position.

BH unit for horizontal installations

Can be installed with air flow *in either* direction; all sizes have duct flanges on both sides. Double drain pan with 1" insulation prevents sweating.

Both models give you...

- Five sizes to match condensing units of 2, 3, 4, 5 and 7½ hp.
- Bonderized steel cabinets with grey hammertone enamel finish... fully insulated
- Circuiting suitable for R-12 or R-22
- Large access panels
- Ample space inside for expansion valve
- UL listed

Ideal for either new or existing residential systems.

BOHN ALUMINUM & BRASS CORPORATION
Danville Division • Danville, Illinois
Buy the known line... the BOHN line

They'll Do It Every Time

by

Jimmy Hatlo

WELL... WHATTA YA KNOW... CHEDDAR AND COMPANY'S GONE BANKRUPT...
FRONT ELEVATION CHEDDAR CO. PROPOSED STORE
THANK AND A TIP OF THE HATLO HAT TO HARRY BALOGH, 250 W. 77TH ST. NEW YORK, N.Y.
3-9
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Have We Oversold Ourselves On the Idea of Kingdom Come?

NOW that we have emerged from the Frantic Fifties into the presumably promising 1960 decade, we are being conned by such high-octane hucksterisms as the following alliterations:

The Sensational Sixties, the Soaring Sixties, the Spectacular Sixties, the Surging Sixties, the Stupendous Sixties, the Sizzling Sixties, the Seductive Sixties, the Salubrious Sixties, and the Scintillating Sixties.

Should all the optimistic economic forecasts we've been hearing come a-cropper, possibly we should arm ourselves with a few substitutes for these Kingdom-Come slogans. Alternate suggestions:

The S.O.S. Sixties, S.O.B. Sixties, Soul-searching Sixties, Shoestring Sixties, Schizophrenic Sixties, Social Security Sixties, Sobering-Up Sixties.

When, as, and IF our promised Steaming Sixties don't heat up so fast as we've been led to believe, perhaps we should note that millions of American families have been acquiring many extraordinary and expensive things and habits (ordinarily beyond their reach) on the instalment plan for a long, long time.

Jillions of new homes and automobiles and party dresses; outdoor barbecues, "tuxes" and gardenia corsages; plush club memberships, vacations in the Bahamas, motorboats, ski-weekends, skin diving. . . .

Fabulous new shopping centers, luxurious offices, motels (Hollywood-set), and boat marinas have been based on this credit binge, too.

Churches are vying with country clubs and colleges for more-more-more contributions and memberships—much of it based on private debt.

All this "living beyond our means" costs money we don't have, and leaves oppressive and ominous burdens. We don't mean to imply that borrowing *per se* is bad. What is indicated is this:

People need a breathing spell to catch up. And that's what is happening currently.

Inflation and its twin-sister, luxurious living, are habit-forming. Exciting and mesmerizing, too. But they don't proceed at a steadily rising pace. Often they fall back one step for every two paces they go forward.

Although boomtimes show up unevenly on the charts and graphs, many of the sensible skeptics who, at first, resist the dreams of "kingdom come," eventually break down and try to get into the act. Thereupon:

Wage increases every year ensue. Congress appropriates more and more, taxes leap higher and higher.

Onward and upward . . . into bankruptcy? Look, you mossback, we have to expand faster than Russia, don't we?

Soothsayers from gypsy tea-leaf readers to Univac opine that we "ain't seen nothing yet" in terms of prosperity and expansion.

How we're going to pay for all this mounting DEBT (personal and national) nevertheless, is a question that all high school and college lads should study. They'll get the *national* bills, eventually.

Are we saddling our children with overhanging obligations, instead of endowing them? Is another sword of Damocles, perhaps, hanging over their heads?

There is such a thing as expanding too rapidly. Even Khrushchev, commenting on Red China's hellbent industrialization, said recently: "it's costing too much."

Must we learn primary economics from the Soviets?

(Come, come now, Mr. Editor, let's not inject stuffy economics or gloomy ancient history into what started out to be a light-hearted essay. As they say in Washington and Points South: "Manana may never come.")

O.K. Here's a toast to the See-you-on-a-space-ship Seventies:

We may have to get away from it all (with creditors panting behind us) to Mars or Venus, before our grandchildren start asking embarrassing questions! We, you see, may go down in history as the profligate Borrowing Generation.

Anyway, to sum up: that the Sensational Sixties haven't arrived overnight probably can be accounted for by the following fact. Like the Stock Market, they were too heavily discounted in advance.

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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VOLUME 89, NO. 17, SERIAL NO. 1,622, APRIL 25, 1960

From the Files of the News

25 years ago . . .

General Electric introduced eight new condensing units from 1½ to 20-hp. and rated at from 1.8 to 21.5 tons refrigerating capacity. Two models have double-tube counterflow condensers, the others shell-and-tube. . . . 74 air conditioners were sold during 1934 in Baltimore and 62 in Washington . . . most notable gain in Baltimore were installations in food stores (5 in '34 compared with none in previous years) . . . chief increase in the nation's capital was in the store field, with 21 installations reported totaling 500 hp.

Wendell L. Wilkie, president of Commonwealth & Southern Corp., told the House Military Affairs committee that his company could pass on $30,000,000 in savings to electricity consumers under a financing method such as available to TVA. . . . Carrier dealers in the Kansas City area showed an 85% increase in sales over 1933, according to H. G. Strong, dealer contact representative for that territory. There are 13 dealers in Missouri, Kansas, and Nebraska.

"The air conditioning industry, faced with an unusually complex set of engineering problems which stubbornly resist classification and systemization, is so pre-occupied with technical enigmas that selling techniques have been ignored. Solution: **Simplify** complexities rather than explain; hire salesmen to **sell** and engineers to **solve** (installation and other problems); read the NEWS for complete coverage on workable selling techniques, as the industry reports its experience to us." . . . So said a NEWS editorial.

How to hook up in multiple an ice cube maker, beer cooler, and refrigerated storage room, with an ice cream cabinet, was shown in a drawing. Use of a two-temperature snap-action valve in the suction line from the ice cube maker was recommended. . . . Complete air conditioning of the U. S. Dept. of Interior building will be handled by York equipment supplying 500,000 c.f.m. of conditioned air.

10 years ago . . .

Mason & Lowman, air conditioning dealers in Cincinnati, are including a 60-day repurchase agreement with each air conditioning contract and find it a tremendous sales booster. . . . A "heat pump" cooling and heating system was installed in the St. Louis residence of Dominic Intagliata, an air conditioning contractor who will furnish additional data to the experimental work compiled for three years by Union Electric, a St. Louis utility company which is completing records on heat pump operation.

The Crest Hills Country Club in Cincinnati installed air conditioning because members were presold on it by cooling their offices and it is estimated that now food and bar business has been increased by 50% while attendance at the club has increased by 75%. . . . Engineering data on its "Controlled Humidity Method" of air conditioning which employs "Hygrol," a hygienic liquid absorbent, has been assembled by Niagara Blower Co.

The Colonial Cafeteria in Fort Worth, Texas reported a summer profit increase of 111.31% after installing air conditioning; the owner pointed out that his business showed these increases when practically all restaurants throughout the nation were showing declining volume. Comparisons were made month-by-month with volume done when the establishment had evaporative cooling, and after refrigerated air conditioning was installed.

"Air conditioning, which is now commonplace in theaters, stores, and restaurants, will come to be accepted in offices and homes," according to the stockholder relations department of Stanley Heller & Co., who pointed out that by 1949, 95,500 room air conditioners at a $410 average were sold compared to only 1,126 units sold in 1946 at a $590 average. . . . The air conditioning industry should continue its steady growth during the "fifties," said Reuben N. Trane, president, the Trane Co., but emphasis on "comfort" aspects would be supplemented with industrial, food, and chemical processing and transportation uses.

ARCHITECT, ENGINEER ASKS ALA MOANA CREDIT

John Graham & Co.
Seattle, Wash.

Editor:

We noted with interest the article on Hawaii. We also note that you have copied a portion of our specifications on the Ala Moana Project and mentioned this project in a number of its various aspects.

Since our office is the architect and engineer for the project and designed all of the air conditioning work furnished by the landlord, which included the Sears, Roebuck & Co. store, care should have been exercised in the article to indicate this and to avoid leaving the impression that the air conditioning was designed by one of the contractors. We, therefore, request that a clarification be printed in one of your next issues.

R. R. KIRKWOOD

AIR FORCE ENGINEER UPGRADING ARTICLE GETS TO GRASS ROOTS

Hq, U. S. Air Force
Washington, D. C.

Editor:

Your article about the Air Force's Engineer Upgrading plan in the March 21 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS is comprehensive and enlightening. It is evident that you were able to get to the grass roots of our program in your interviews with the various officers and civilians.

The story of our Professional Development program, carried in a publication enjoying the circulation which the NEWS does, is beneficial not only to our own Air Force Civil Engineers, but may serve as a challenge to those in the business outside military service.

MAJ. GEN. A. M. MINTON,
Director of Civil Engineering

BOATER SEEKS BOOK ON REFRIGERATORS

Southwestern Engineering Co.
Los Angeles, Calif.

Editor:

I have a number of friends who have electric refrigerators on their boats, either in the form of a straight freezer, a deep freeze of a single unit combining the two. Mine is the latter. These are simple water-cooled "Freon" compressor units in which more "Freon" must be added occasionally, or more refrigerant and sometimes other types of repairs are needed in the field. I personally carry ten one-quart cans of "Freon" together with the gauges and other gear necessary to add the "Freon" at the proper point in the compressor.

Is there any simple book that gives instructions in the maintenance and operation of such small, simple compressors and the accompanying freezing units? I find that between troubles I have forgotten all that I knew on the subject and have to work my way through the library books, and I guess it is the same with all people who have boats.

But there are so many boats now that are equipped with refrigerators that I think there could be a place in the field where a small universal book covering air-cooled, water-radiator-cooled and keel coil-cooled refrigerants that would be very helpful to the boating public, and if such is available, I certainly would like to have at least a half dozen for me and my friends.

ROBERT P. MILLER

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Air Conditioners Among Florida Sales Leaders During First 2 Months

MIAMI, Fla.—Florida Power & Light Co. reported that air conditioners were among sales leaders in its territory for February and the first two months of 1960.

Sales in February totaled 2,344, up 41% from the 1,661 sold in the same month of 1959. This brought sales for the first two months of this year to 4,331, a gain of 19% compared with the like period of last year when the total was 3,637.

The report covers unit sales to dealers in FPL areas as reported by state wholesalers, and sales by department and chain stores and some retailers who purchase their merchandise from sources other than state wholesalers.

Dallas Contractor Gets $700,000 Kapiolani Bldg. Cooling Contract

DALLAS—Sam P. Wallace of the Pacific, Ltd., a division of Sam P. Wallace & Co. of Dallas, mechanical contractor, announced that it has been awarded a $700,000 contract for the installation of the air conditioning and ventilation of the Kapiolani building, a new 24-story office building being erected in the $30 million Ala Moana Shopping Center in Honolulu, Hawaii.

This building will be the tallest air conditioned structure in the Hawaiian Islands, according to the announcement. The air conditioning will consist of 700 tons, and will be a high pressure double duct system.

Other projects in the area, recently awarded to Sam P. Wallace of the Pacific, Ltd., include four Nike Hercules rocket sites for the defense of the Island of Oahu, it was reported.

This division of Sam P. Wallace & Co. was organized just two years ago to serve the Pacific Island area and in this time has acquired more than $2½ million worth of mechanical contracting work which is executed from its Honolulu offices, the announcement said.

In addition to the Honolulu branch, other offices are located in Dallas, Cincinnati, Atlanta, and Monterrey, Mexico. To serve the Caribbean area, there are branches in San Juan, Puerto Rico; Port-of-Spain, Trinidad; and Kingston, Jamaica.

Curtis
cools
RETAIL STORES & SUPERMARKETS
INDUSTRIAL PLANTS & HOSPITALS
OFFICE & APARTMENT BUILDINGS
HOTELS & MOTELS
BANKS & CHURCHES
etc.
EVEN TOWBOATS
with
Packaged Air Cooled Conditioning Units 3 thru 10 Tons
Packaged Air Conditioning Units 3 thru 60 Tons
Packaged Liquid Chillers 7½ thru 125 Tons
Matching Evaporative Condensers, Cooling Towers and Air Handling Units
Condensing Units 3 thru 100 Tons

And in all applications—Curtis units perform dependably, always up to and frequently surpassing rated capacity. Key thing to remember is this...Curtis manufactures a complete line of units ideally suited to any application your customers are bidding on. You can depend on Curtis for high quality equipment with dependable performance. And a steady national advertising campaign developed around well known prestige installations helps pre-sell your customers. Your profit on Curtis is substantial, and your customers like the minimum service needed.

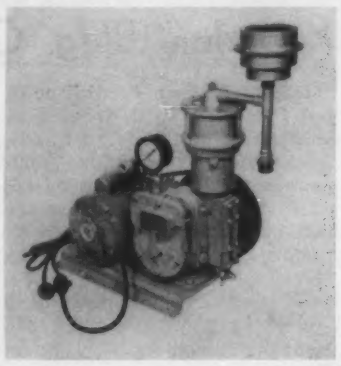
THE COMPLETE LINE OF LIQUID CHILLERS • PACKAGED AIR CONDITIONERS • CONDENSING UNITS

Curtis *Established 1854*

MANUFACTURING COMPANY • REFRIGERATION DIVISION • *Dept. 1, St. Louis 33, Missouri*

Airserco Adds Portable High Vacuum Pumps

● Two new portable high vacuum pumps have been added to the line of high vacuum pumps available from Airserco Mfg. Co., Dept. AH&RN, 435 Melwood Ave., Pittsburgh 13.



These pumps are identified as models KC-2R and KC-3R. They have pumping speeds of 2 c.f.m. and 3 c.f.m. in free air, an ultimate vacuum of 5 microns of mercury, total pressure, and will service up to 10-ton air conditioning and refrigeration systems, the company said.

"Airserco modifications of these pumps make them specially suited for the dehydration of refrigeration units," it was stated. "An increased oil capacity to 16 oz., a large oil separator and recovery unit, and a smoke arrestor protected by an oil drop-out trap, permits longer pumping cycles and the use of these pumps in areas where smoke or oil fumes would be objectionable, it was pointed out.

"Other features include a manually-operated vacuum breaker, an oil drain valve, a flared connection for the suction line, a 0-30-in. Bourdon gauge, a heavy duty power cord with an in-line switch, and a sturdy carrying handle. A maintenance kit with the replacement parts usually used during three years of service is available as an accessory," according to the company.

Ice Flake Machine Claims Easy Cleaning, Servicing

● An ice flake machine which the company says has "new, exclusive" features was introduced recently by Freez King Corp., Dept. AH&RN, 2518 West Montrose Ave., Chicago 18, manufacturer of soft ice cream freezers, milk shake dispensers, and other refrigerated equipment.

One feature of this new ice making machine is its ice auger, which is set in an evaporator of wrapped-coil construction designed to obtain maximum freezing.

"The entire auger assembly may be lifted right out of the machine in seconds, and completely disassembled, to make cleaning and servicing extremely simple," the company said. "The complete ice-making mechanism and condensing unit are mounted on a platform, which slides out the side of the cabinet for ready accessibility, and further simplifies servicing and maintenance.

"Two models are available. Model 25, equipped with a ¼-hp. hermetic condensing unit, has a capacity of 250 lbs. of ice flakes in 24 hours, based on 75° room temperature and 60° water. Model 25-A has a capacity of 300 lbs., and is equipped with a ⅓-hp. hermetic condensing unit. Both models are fully automatic in operation."

Cabinet dimensions are 34 in. wide, 26 in. deep, and 38 in. high, including 5 in. adjustable leveling legs. The extra-large storage bin holds up to 135 lbs. of flake ice.

Thermostats Feature 'Straight Line Look'

● Two new lines of thermostats with rectangular "straight line look" styling have been announced by White-Rodgers Co., Dept. AH&RN, 1209 Cass Ave., St. Louis 6.

Both lines employ sealed mercury contacts and have plastic bases and covers. Wall adaptor plates are available to cover old thermostat mountings.

Horizontally styled "D'LUXline" thermostats are available in three models for heating, cooling, or heating-cooling. Heat anticipator is adjustable over range of .35 to 1.1 amps. Cooling anticipation is fixed. Pushbutton sub-bases for heating-cooling applications can be provided for use with this thermostat, as pictured.

Vertically styled "MAINline" thermostat is designed for heating only. Heat anticipation is fixed, but removable carbon disc resistors are available in five ranges to match all primary controls, the company states.

Robinair Adds Process Tube Fittings Kit

● Latest addition to the "Robbi" line of refrigeration component change tools—12458 process tube fittings, has been announced by Robinair Mfg. Corp., Dept. AHRN, Montpelier, Ohio.

This tools is said to provide a fast, easy, and sure method of connecting charging lines for evacuating, dehydrating, and recharging refrigeration systems with process tube accesses.

Tool design assures an absolute seal from tubing to charging hose, the company claims, adding: "By simply cutting process tube seals, inserting tube in tool, tightening seal, and attaching charging lines, the serviceman is ready."

12458 is a kit of two master fittings for sealing both process tubes and hardware adapters for use on 3/16, ¼, 5/16, and ⅜ in. tubing.

The Most Complete Line you can sell is

PERFECTION

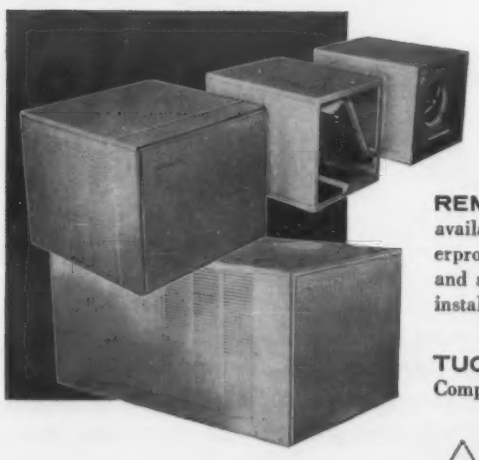
Why miss a sale because you don't have the right unit for the job? In the popular 2-ton thru 5-ton size range, Perfection offers you a wider selection of units than you'll find in any other line — types and sizes for any residential or light commercial installation — heat pumps or air conditioners — remote or package models. Compare Perfection with your present line. Think what those extra units can mean to you in extra profits.

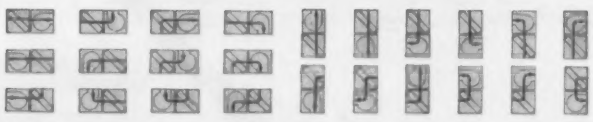
A FULL SELECTION OF AIR CONDITIONERS

REMOTE — Air cooled condensers in 2, 3, 4 and 5-ton sizes—all featuring Perfection's exclusive upflow circulation for added safety, efficiency and quietness—all weather-protected with a U. L.-approved, 2000-hour salt-spray tested finish. A complete selection of evaporators and air handlers: angle, "A", counterflow and horizontal coils; versatile horizontal and vertical evaporator-blower combinations to solve any installation problem.

TUCKAWAY — Package units in 2 thru 5-ton sizes — all with efficient air-cooled condensers, durable 2000-hour salt-spray tested finish, and double-wall construction on evaporator-blower section.

A FULL SELECTION OF HEAT PUMPS





REMOTE TRI-PAK— The most versatile heat pump you can sell, available in 3 and 5-ton capacities. Remote air-cooled condenser, with weatherproof 2000-hour salt-spray tested finish, is installed outside. Indoor coil and air handler can be combined in every conceivable manner to meet any installation requirement (12 basic combinations are shown above).

TUCKAWAY — Quickly-installed package units in 2, 3, 4 and 5-ton sizes. Compact, easily-serviced, with weatherproof, fully sound-insulated cabinets.

BE A PERFECTIONIST!

See your nearby Perfection Distributor for full information on the complete Perfection line. Ask him for the free booklet, "How to become a PERFECTIONIST." It's new, and loaded with sales tips. If you don't know him, ask us for his name.

PERFECTION DIVISION
HUPP CORPORATION
CLEVELAND 10, OHIO

Perfection also manufactures a complete line of World's Fair award-winning furnaces. Broad selection of types and sizes — gas, oil or electric.

DEFLECT-O For Summer Cooling

Directs Cold Air Up

New addition to regular baseboard wall DEFLECT-O line, a deflector for older type registers. Saves on painting and plastering.

Orders in lots of 6—$2.50 each

DEFLECT-O Co.
3860 Glencairn St., Indianapolis, Indiana

Gibson's Texan Has 21,500 Btu Capacity

● A 2½-hp. Gibson air conditioner dubbed the "Texan" recently made its debut to dealers, according to Gibson Refrigerator Div., Hupp Corp., Dept. AH&RN, Greenville, Mich.

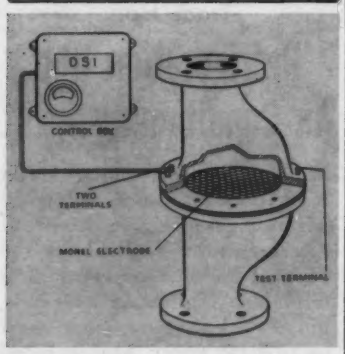
The new model is designed to fill an existing gap between room units and central air conditioning, Gibson said, adding: "The Texan, which will cool areas up to 1,500 sq. ft., is perfectly suited for either medium sized places of business or 'whole house cooling' of medium sized homes. The unit can be installed in transoms.

The Texan has a cooling capacity of 21,500 B.t.u. Other features include fresh air and exhaust, germ killing filter, and automatic thermostat. Dimensions of the 230-volt, 15-amp. unit are: height, 16⅝ in.; width, 27 15/16 in.; depth, 34 in.

The new cooler can be retailed for $479.95, it was stated.

Want More Details?

ADDITIONAL details on products that are described on these pages may be obtained by writing the manufacturer at the address given in each What's New story.



Unit Electrically Inhibits Hard Scale

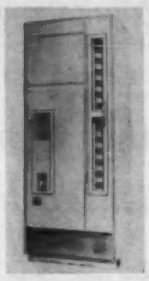
● An economical, in-line scale inhibitor, which electrically pretreats hard water, is now available from Dehydrosal Systems, Inc., AH&RN, 521 Fifth Ave., New York City 17.

"Based on a principle of physical, rather than chemical effect on hard water salts while they are still in solution, the unit is simple, foolproof, and fully automatic," the company claims.

"Because there are no moving parts to wear out, the device requires virtually no maintenance. Operating expenses are minimal; only a current of a few milli-amps is required. This may be supplied by connection to a standard a.c. source, or a battery-powered unit may be installed in remote locations. . . .

"Already proved by actual operation of over 10,000 units throughout the world, the DSI process lends itself to a variety of uses where chemical water pre-treatment is too costly. The process does not remove any of the water impurities, nor does it result in chemically softer water. But a DSI unit will prevent the formation of hard scales or deposits, and is ideal for applications where this is the primary consideration."

130 Bottle Vender Occupies Only 4 Sq. Ft.



● Addition of the new model "Bev'Serv 130" visual selective upright vender to its line for 1960 has been announced by La Crosse Cooler Co., Dept. AH&RN, La Crosse, Wis.

The company said the vendor has been designed for the high-volume outlet, offering a 13 flavor selection and vending capacity of 130 bottles. Pre-cool capacity is 30 bottles. Even though the bottle capacity is high, the Bev'Serv 130 occupies only 4 sq. ft. of floor area, it was pointed out.

The same "straight-line" design is utilized in this model as in the other models being produced. Other features include a glass paneled vending door, illuminated beverage display, straight bottle pull-out, chromate dipped interior parts, and baked on duPont enamel finish. Bottle release has been made "extra-easy" with the addition of nylon rollers at both the top and bottom of the vending release position. A micro-switch in the electrical circuit prevents the patron from inserting a second coin for one purchase.

Water Treatment Line

● Introduction of a complete line of chemicals for treating water towers has been announced by Skasol Corp., Dept. AH&RN, Webster Groves 19, Mo.

In addition to "Nu-Coil," its standard liquid scale remover, Skasol is producing a granular scale remover, Skasol scale and corrosion inhibitor in nugget form, and three types of algaecides, in liquid, granular, and tablet form.

The firm is adding sales representatives and will broaden its distribution nationally.

43-In. High Furnace Ready for Cooling

● Only 43 in. high, its new "Stylist Lo-Boy" furnaces are specially designed for space saving installation and the easy addition of cooling coils for whole-house air conditioning, according to Perfection Div., Hupp Corp., Dept. AH&RN, 1135 Ivanhoe Rd., Cleveland 10.

"The low silhouette design is made possible by the new compact 'Heat Bank' heat exchanger that collects heat in the flame contoured bottom section and then carries it up through narrow passageways for maximum utilization," Perfection said.

"The compact size makes the addition of cooling coils easy even in low-ceilinged basements. Since the large, quiet, centrifugal blower also has the extra air handling capacity needed for cooling, considerable savings of both space and money are made by putting the cooling coil on top of the furnace.

"Easy to install, the Stylist has a full steel bottom that adds rigidity and makes grouting unnecessary. Four leveling bolts in the base eliminate the need for special concrete bases or shims. Gas fired, the Stylist Lo-Boy comes in four sizes: 75,000, 100,000, 125,000, and 150,000 B.t.u.h."

Ever hear of a bashful air-cooled condenser?

Check the new Halstead & Mitchell vertical air flow condenser

H&M's new ACV Air-Cooled Condenser with vertical air flow hates to be showy. It's so low and so quiet, you hardly know it's there—very appealing to owners, their neighbors, architects and engineers!

Roof loading is low, too, and air flow noise is directed away from surrounding structures. This delights building owners and tenants alike.

Vertical air flow models are available in 5 to 100 tons. And like all H&M Air-Cooled Condensers, the ACV series features exclusive Turbu-Flo fins, spaced wide to prevent clogging by air-borne dirt. Multiple circuiting is available for your specific needs *at no extra cost.*

Get the whole story on H&M Air-Cooled Condensers—with propeller or centrifugal fan. Ask your refrigeration wholesaler for a copy of the new bulletin AC-102. Or write to Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.

Halstead & Mitchell

Air-Cooled Condensers • Finned Coil Products • Water-Cooled Condensers • Cooling Towers

What's Going On in Commercial Refrigeration

News of Markets, Products, Methods

Food Retailers Told To Build Character Into Their Stores

CHICAGO — Food retailers should try for the personal touch and build character into their stores, Ralph Ernst, architect and store engineer, stated at a food store management seminar held here.

The annual executive conference for food retailers and their key personnel is co-sponsored by the National Association of Retail Grocers of the U. S. and the School of Business of Florida State university.

Ernst illustrated modern layout techniques for achieving maximum sales appeal.

According to Ernst, aisles should be kept at a minimum of 5 ft. and a maximum of 6½ ft.

"The shopper won't shop both sides of a wide aisle," he said, "she merely looks at 50% of your stock. The average person is right-handed so it is wise to put your profitable items at eye-level on the right-hand side."

Contrary to one popularly-held belief, a gondola across from the meat department is not the spot for impulse buying, Ernst said. The store needs a wide aisle in front of the meat department for carts.

Lee S. Thomson, Jr., NARGUS produce department director, predicted that the produce department of the 1960's will be a "dazzling showcase for 150 different varieties of fresh fruits and vegetables" and retailers will — and must — give greater attention to detail and promotion of produce.

Extra care in trimming and packaging and more careful control of temperature and humidity are required for an outstanding produce department, he said.

He also advised retailers not to underestimate the importance of good supplier relationships, and to take the time to do their own packaging so they can dispose of any off-quality merchandise and separate or grade the other levels in the shipment.

Bastian-Blessing Meeting

CHICAGO — The Bastian-Blessing Co. will hold its annual national sales meeting at Sheraton Towers in Chicago May 6 and 7.

Some 125 distributors and their salesmen are expected to attend. Many of them will bring their wives who are invited to participate in the social functions with which the work sessions are interspersed, it was noted.

Members of distributing organizations who attend will remain for the opening of the National Restaurant Exposition on May 9, at which Bastian-Blessing will have a comprehensive display of restaurant and cafeteria equipment.

MERCHANDISERS

Howard manufactures a complete quality line of commercial refrigerators and freezers. Priced right, provides more daily sales and profits.

Territories for distributors and manufacturers' agents.

For a free Master Catalog write to Dept. N,

Howard Refrigerator Co., Inc.

4745 Werth St., Philadelphia 24, Pennsylvania

C. V. Hill Appoints Estes, Rutishauser To Management Staff

TRENTON, N. J.—C. V. Hill & Co., Inc. has announced two additions to its management staff:

G. Estes

George Estes has been named director of engineering manufacturing, which entails the coordination of the functions of purchasing, production control, time study, and process engineering. He has served with other major firms as manager of manufacturing engineering and other management positions.

D. Rutishauser

Donald Rutishauser has been appointed director of engineering and as such is responsible for coordination of all product engineering. Rutishauser has had an extensive background in all phases of commercial refrigeration having served as vice president and chief engineer of another refrigeration firm.

Missouri Judge Refuses To Dismiss Borden Suit

JEFFERSON CITY, Mo. — Cole County Circuit Judge Samuel E. Semple has refused the State's motion to dismiss The Borden Co.'s suit against Missouri's new law banning sale of milk products below cost. Hearing to test the law was set for June 27.

Advantages Cited

Case for the 'Upright Frozen Food Case' Presented In NARGUS Bulletin

CHICAGO—The case for the "upright frozen food case" was presented in the February "Modern Stores" issue of *NARGUS Bulletin*, the monthly magazine of National Association of Retail Grocers of the United States, whose members operate 112,000 stores throughout the nation.

An article by Glen Silverthorne, president of "Tops All Markets," Portland, Ore., compared a 14-door upright case used in one of his stores with a conventional frozen food case in another, on the basis of convenience, sales, maintenance, and operating cost.

The upright case occupies 120 sq. ft. of space, and has a 280-cu. ft. capacity, while the conventional case occupies 228 sq. ft., with only 180 cu. ft.

The ratio of frozen food sales from the upright case exceeds the conventional case by 17%, Silverthorne said. He reported that his staff finds the upright case easier to stock, and mentions that in case repairs were necessary, a comparatively small quantity of merchandise would have to be removed.

In a comparison of operating costs, Silverthorne finds that the upright case uses six horsepower as against nine horsepower for the open case. Defrosting cycle is eight minutes for the upright reach-in case compared with 30 minutes defrosting time for the conventional case, he said.

The upright cases hold the same amount of merchandise in 30 lineal feet as is contained in 57 feet of lineal space occupied by open cases in the store used for comparison. Heated doors, he said, are warm to touch, free from condensation, and easy to open.

John Klein Heads New Firm

MESA, Ariz.—The new Arizona Refrigeration Co., 414 S. LeBaron here, is headed by John Klein as president.

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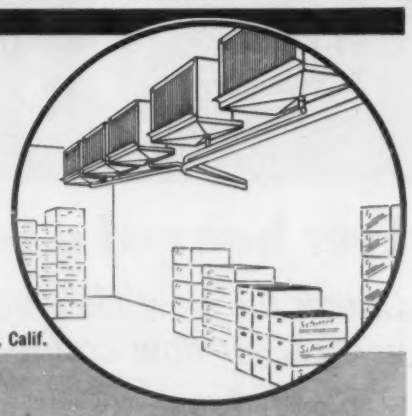

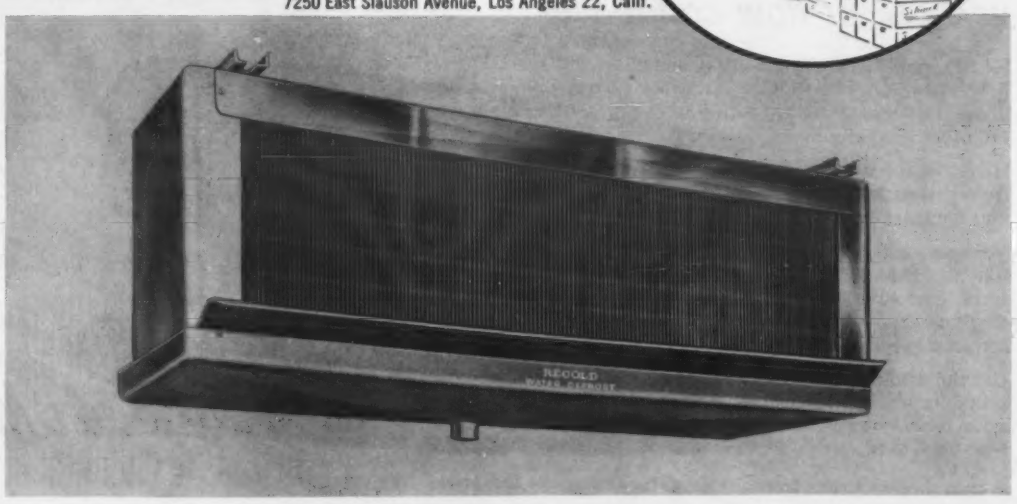

Direct Factory Sales

5-Point Policy To Protect Distributor and Manufacturer Outlined at NCRSA Meeting by James A. Scatena

ATLANTIC CITY, N. J.— "Never before in our history have we ever walked a precipice with such danger of falling into a canyon from which we can never climb out, until many, many distributors and manufacturers have been hurt."

So declared James A. Scatena, general partner, Scatena York Co., San Francisco, in a talk at the 13th annual convention of the National Commercial Refrigerator Sales Association.

Speaking on the subject, "The Distributor — Vital Link With Supplier and Customer," Scatena said in part:

"I should like to talk to you first about our history of the last 25 years. Then I would like to tell you of my own experience of the last year with this so-called monster known to us as direct factory sales—not on this basis that it is entirely the fault of the manufacture, but on the basis of the distributor's responsibility in bringing about this mess, as well.

"Finally, I would like to present a few suggestions on what we collectively, manufacturers and distributors, can and should do about it.

"First the history. In my brief and indeed interesting 27 years in this industry as serviceman, salesman, sales manager, and owner, I can honestly say that I would not have traded it for any other field of endeavor.

Remembers When $10,000 Covered Cost of Market's Refrigeration

"I have witnessed an evolution in our industry, from a point where in 1932 $10,000 would cover all of the refrigeration machinery and display case contract for a 15,000-sq. ft. market . . . to the present day when this sum doesn't even cover one third of the expenditure for the frozen food cases alone.

"There was a time when a refrigeration contractor sold and installed refrigeration equipment only. Today you all know how much non-refrigerated equipment is included in a market 'package' installation. All this has happened in spite of the conglomeration of mixed up distribution arrangements that are a challenge to anything that even slightly rings of a sound economy.

Direct Sales Policies Have Changed

"We have seen our industry start out in some cases with a distributor policy of sales and installation through direct factory branches. Then, when the manufacturers found out that they couldn't make a profit that way, they started to set up distributors and to abandon direct sales and branches.

"We have seen some manufacturers start out with sales through franchised distributors and we have witnessed these distributors operating on an unsound basis to a point where they failed and then the manufacturer, in an effort to keep things going, has stepped into the territory on a direct-sales basis.

"Let's for the record stop to define the word 'distributor' as it applies to our industry. Actually, we should be called contracting distributors who engineer, sell, install, and service food store refrigeration equipment and fixtures. We are not 'distributors' as the term is applied to firms who resell through dealers.

"We have areas where union contracts hold distributors to a high wage scale and then turn around and permit one or two man shops to stay in business with union cards, so that they can cut price for service rendered and make it practically impossible for a distributor to operate a service department.

"These independent operators are the ones who make it possible for the manufacturer to sell direct in certain areas, as I shall cover later.

"We have seen distributors who do not want a service and installation department and prefer to contract their service through the independents who are biting the hand of their fellow distributors.

"We have seen the opportunists who got into this business during and immediately following the last war. Most of them failed, but in so doing they left a terrible scar on the industry, particularly as to the attitude of banks and loan agencies toward this business in which we are engaged.

"Have you ever wondered how this industry could grow to its present gigantic magnitude through all of these obstacles.

Good Distributor Practices Outlined

"Well, it has, and in spite of the hardships, some mighty fine distributors have developed with sound business policies. In everyone of these success stories, someone paid the price. They knew that you couldn't make money without earning it. These distributors knew that you have to have:

"1. Sound policies in sales and distribution.

"2. Faith in your manufacturer, so as to stay with one line even in the lean years, when the manufacturer is not necessarily producing a line equal to the competitor's.

"3. Good management.

"4. Good live sales department.

"5. Good store planning and designing department.

"6. Adequate financing facilities.

"7. Good installation and service department.

"There may be some other qualifications, but I am sure you will agree that these are the most important ones. These distributors recognize that there is no short cut. **You can't farm out your grief.**

"But, in spite of all this, these distributors who have paid the price and have done well, have been plagued, or will be, along with the distributors who caused it, with this so

(Continued on next page)

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Direct Factory Sales--

(Continued from preceding page)

called 'manufacturer's direct-sales policy' to the small chains of less than 10 stores and sometimes even a single store.

"And so what are we going to do about it—I mean the manufacturers and the sound distributors? Listen to this—what one factory official recently wrote to me, and I can't say that I blame him entirely, but I will definitely say it isn't the answer. (I should explain that this statement was made in answer to a letter from me to him, pointing out the problems of direct selling.) I quote:

" 'I can't honestly blame (blank company), since I am talking about them, for attempting to get business out of an area in which they are not properly represented by a distributor. For I feel very definitely that we would react in the same manner.'

"In other words, if this manufacturer can't obtain the business out of an area where they are not represented by a distributor, they seem to feel that the answer is to sell direct rather than to go about the locating and training a distributor who will represent them in that area. The emphasis seems to be away from locating, training, and building distributors.

"Let's compare this manufacturer's analysis with the opinion of a distributor in California, who wrote to me as follows:

" 'Pursuant to our conversation of Aug. 31, 1959, with reference to the (blank company) quoting a small local chain on a direct distributor cost basis, we can see that it is setting up a precedent that will eventually ruin operators of our size, who have enjoyed considerable business with these small chains at a minimum of net profit considering the services rendered.' "

Scatena also quoted the distributor as saying that if manufacturers "insist on using these tactics in territories only where they are not strongly represented," then the only thing distributors can do is either disregard the producers who are doing this "or dump their service problems and see what the ultimate outcome will be; which you know will be disastrous to them."

Scatena indicated he didn't agree with the first alternative but said he did agree, "and I think the manufacturers also will, that his statement about dumping service problems on to the manufacturer and bringing about disaster is an eventual certainty.

Manufacturer, Distributor Share Responsibility

"How can we as an industry be so naive and so uninformed as to not realize that we face this problem together. It will hurt us together if the customer doesn't get the proper service.

"A direct factory sale installed by a local disinterested independent contractor will generally not result in as satisfactory a package to the consumer as one that is conceived, sold, installed, and maintained by the interested local distributor whose interests are not divided. One will never successfully and permanently replace the other, at least, not in our time.

"Referring again to one factory official's communication with me, I quote:

" 'I do not accept a direct sale where it's going to hurt our distributors, but when we are forced into it because of competitive practices, what choice have we?'

"In my opinion this analysis is one of expediency . . . sort of a gasoline price war where the independent distributors are caught in a maelstrom over which they have no control. If it takes this kind of a war to bring the manufacturers together to arrive at a more permanent and sensible solution, let us hope that it will be a short war.

"There is so much truth in one sentence of a recent letter to me . . . a letter from Marie Lawton [NCRSA executive secretary], and with her permission, I quote:

" 'I will say this, I think the manufacturers do not wholly realize how seriously they are legislating against themselves in pursuing a policy of direct sales.'

"None of us, and certainly not I, can claim to have all the answers, but history does have a habit of repeating itself and we must certainly agree that the plan of manufacturers competing against each other on direct sales to small independent chains is not a stable plan.

How Many Distributors Don't Have Their House In Order?

"Before going into a few constructive suggestions, let me straighten out any misgivings about the distributor's responsibility in the problem.

"How many distributors are there in your particular state who do not have their house in order? How many distributors in your state do you know who do not offer to the buyer the necessary distributor services: Design, engineering, financing, installation, maintenance.

"How many just sell at the lowest price and perform none of the other functions. Or how many just plan, finance, and sell and **don't offer the installation and maintenance service.**

"To these distributors around you who offer just these services we can confidently say that they aren't offering anything that the manufacturer cannot do as well or put it another way, the manufacturer can offer all these things that they are offering and one more 'a better price.'

"The manufacturers would not be faced with a problem of distribution that they are today in the areas where the direct sales war is going on if the distributors had paid more attention about getting their house in order.

"After gathering opinions from correspondence from our own factory, our fellow distributors, our competitive distributors, and even our attorney, I am sorry that I have not been able to come up with anything completely conclusive, but I do have a few suggestions.

"Everything seems to revert back to the grim reality that manufacturers and distributors have to solve this problem **together.**

Five Suggestions For Solving Problem

"These are my suggestions although certainly not entirely original.

"First: We at Scatena York Co., in addition to the McCray Refrigeration Co., represent the York Corp. in our area on condensing units and ice machines and air conditioning. We sell these products to all sizes of chains in our area on a national account price basis and we have done this for years.

"The chains do not seem to mind it. Competitors have not taken all of our business away from us. What is the big difference between a display case, a condensing unit, and an ice machine, as far as the distributor function is concerned?

"York has worked a very harmonious and successful sales program to national accounts through their distributors where the distributor profit is set at a lower level and the distributor, by the way, has to earn it. It is not a kick back deal or a gift. Why couldn't the case manufacturer give this or a similar plan consideration?

"Second: Our association attorney has determined, as I am sure most of you already know, that direct sales practice is not only easily tackled from a legal standpoint. In our State there seems to be a possible legal angle and I quote from our attorney's letter.

" 'A functional discount cannot be granted to a large purchaser, (i.e. in lieu of the quantity discount), unless that purchaser actually performs the function to which the discount relates.'

"We interpret this to mean that the purchaser must plan, design, install, and service the same as a contracting distributor. This is a facet that might be explored, as I feel rather certain that you manufacturers are as anxious as we are to get the brakes put on . . . but litigation is costly, slow, and generally unsatisfactory. We should take a different road to the solution. But, if all else fails, even this road should be considered.

"Third: Instead of the manufacturer getting into the act against a fellow manufacturer, why not make it possible, through a policy of volume purchase discounts, for your distributor to compete on chain store business?

"You may say that the chain stores will not buy from the distributors, but if the majority of manufacturers agree on a policy of sales through distributors you can be reasonably certain that the chain store is going to have to respect that policy.

"The distributor on the other hand must quote lower mark-up to get the business away from the competitive manufacturer who does not have the same policy, realizing that it is better to keep and build up the account on a lower but liveable profit, than not to have it.

"Fourth: Let's set up a definite rule, if it is legal, as to when a chain has enough stores to qualify for direct factory purchase. Are two stores, 10 stores, 50 stores, going to be the rule . . . is statewide or nationwide going to be the rule? Let's try to keep it from getting worse.

"Then, for those chains that are buying direct because of their size and because they have design facilities and do perform all of the functions of a distributor, let the manufacturer sell to them direct.

"But, in the case where the manufacturer is selling the job as an installed package, let his own distributor be the one to install and service the equipment. Do not make a policy of getting competitive installation figures from your own distributors and independent competitors.

"If the manufacturer does not feel that his own distributor is capable enough, let the manufacturer make certain by his own investigation that he is not capable. But let him not take the easy route of side-tracking him just because the chain store feels that he would rather have someone else make the installation. . . .

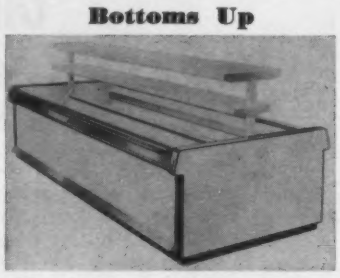
"Fifth: Factories should pursue a policy of setting up distributors who have their house in order and then instead of selling around them—help them through a process of education.

"In our own territory there was one district manager 10 years ago representing our factory and there is still one district manager today, in spite of the fact that the volume of business has increased probably 10 times in the territory. The factory should try to get more help in to the field to build up distributors, **not** more help to sell direct."

After again stressing that distributors should offer all of the distributor services noted above, and urging continuation of the industry's Joint Relations Committee, Scatena concluded with this advice to manufacturers:

"If you have not made enough money via the distributor route, you are not going to make it for long on a direct-sales program. You may for a little while until the grief begins to show up."

Bottoms Up



THIS PICTURE of McCray's "Dual-Isle" low temperature merchandiser for frozen foods and ice cream was published "downside up" in the April 18 issue of the NEWS. Although it looks good either way, the NEWS was not proposing any change in installation practices.

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Throughout the air conditioning and refrigeration field, A-B starters are preferred for their trouble free performance. The solenoid design—exclusive with A-B in all starters up through Size 8—has only ONE moving part. This assures millions of dependable operations. And they have double break, silver alloy contacts that never need servicing. Permanently accurate overload relays protect motors against burnouts. In ratings up to 450 hp, 220 v; 900 hp, 440-550 v.

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Open type Starter Bulletin 709. Size 2 shown.

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In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

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Universal Match Plans To Broaden Refrigerated Cabinet Activities

ST. LOUIS—Plans for expansion of the refrigerated cabinet business of a subsidiary, Universal Cabinet Corp., were disclosed by Universal Match Corp. in its annual report for 1959.

Pointing out that metal fabricating has now become a major area of operation, the report said:

"Prompted largely by the fact that National Vendors, Inc. [vending machine subsidiary] was one of its major customers, S. G. Adams Co. . . . was acquired. Customade Products Corp., purchased in the same transaction, manufactures such items as license plates, metal tags, and highway signs.

"After purchase of the ice cream cabinet division of Anheuser-Busch, arrangements were made for the construction and leasing of a new 206,000-sq. ft. plant at Conway, Ark., to provide ample and modern facilities for Customade, which is to produce these cabinets. Manufacturing operations in this plant will begin in April, 1960.

"Universal Cabinet Corp. . . . is selling these refrigerated cabinets and related items. Research, development, and production planning are under way to expand the types of refrigerated cabinets beyond the present line for ice cream and other dairy products."

Later, at the annual meeting of Universal Match in Wilmington, Dela., in commenting on new products of the company, a device that shows promise is an "air-curtain" door to keep warm air in and cool air outside a building, or the reverse, without doors or mechanical closures. This device, made and sold by the company's American Air Curtain Corp. subsidiary, "is in its absolute infancy," but inquiries are "coming in leaps and bounds."

Universal Match acquired American Air Curtain last October.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Vertical Freezer Displays Product At Eye Level

TACOMA, Wash. — Placing the product directly before the customer at eye level and big savings in valuable floor space are cited as advantages of the "Cold Cache" vertical-display frozen food cabinet manufactured by Room-Temp Lockers, Inc. here.

One five-door cabinet, 11 ft. 6 in. long, occupies 48 sq. ft. of floor space but has 100 cu. ft. of display, it was pointed out.

All vertical cabinets are equipped with Cold Cache self-closing glass doors internally heated to prevent condensation on the glass. These doors open with only 10 oz. of pressure.

Aside from the saving in space, the vertical cabinet "offers a great deal in customer convenience. Customers can easily see and select a wide variety of products without stooping or bending."

Room-Temp Lockers utilizes Recold's patented "Vapomatic" coils in all Cold Cache low temperature installations because the heat used for Vapomatic defrosting is instantly available and continues undiminished until the coil is completely defrosted, it was stated.

Hussmann 1st Quarter Betters '59 Period

ST. LOUIS—Hussmann Refrigerator Co. and wholly-owned subsidiaries reported for the quarter ended March 31 net sales of $7,675,231, up from the $6,606,284 reported for the like 1959 period.

Net income was $330,588, equal to 25 cents per common share, against 202,095, or 16 cents a share, in last year's first quarter.

Reporting to stockholders, W. B. McMillan, chairman, and John R. Caulk, Jr., president, noted that net sales and profits "showed an improvement over the first quarter of 1959, although the 1959 quarter included sales and profits of the Aircraft Div. which ceased operations June 30, 1959.

"The relatively small first-quarter deliveries and greater concentration in the balance of the year follows the traditional pattern."

Winning Warren Distributors Cruise Through Bahamas on Yacht

ATLANTA—The Warren Co. has announced the winner in each of the five competitive groups of its three-month national contest, Warren's Bahamas Yachting Party, concluded with orders postmarked April 2.

The winning distributors were Joseph S. Lipack (president, Warren-Joel Corp.), Long Island City, N. Y.; Grover C. Richey & Son, Columbia, S. C.; Marshall Sills, Augusta, Ga.; and West Coast Refrigeration, Inc., Los Angeles.

One of the divisions was composed of the company's district managers, and the winner was Bert Cortellesse, headquartered in Hubbardston, Mass., according to the announcement.

Reservations were made for winners' flights to Nassau April 23, departing from Nassau Sunday aboard the 85-ft. yacht, *Top Idea,* for a week's cruise through the Bahama Islands and back to Nassau. Roger Jacobs, executive vice president and sales manager of Warren, will play host to the yachting party.

Cash prizes and diamond lapel pins were awarded to the ten top-ranking distributors' salesmen in the nation. The top five winners, listed in order of rank, are: Joe Newcomer, Lodi, Ohio; Vincent Paletta, Philadelphia; R. C. Knight, Miami, Fla.; James Bell, Atlanta; and W. T. Williams, Birmingham, Ala.

Each distributor producing 100% of his contest quota will be awarded a diamond solitaire designed especially for Warren. The top two winners in each of the five groups will receive rings with larger stones. There were also special prizes for the home in recognition of Warren shelving and check-out sales.

3-A Sanitary Standard for Milk Cooling Tanks Revised

ATHENS, Ga. — The revised 3-A Sanitary Standard for Farm Milk Cooling and/or Holding Tanks was officially approved by representatives of all participants in the 3-A Sanitary Standards Committees, at their semiannual meeting here.

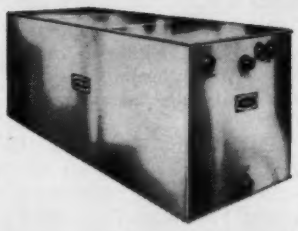
The revision will become effective on Sept. 1, 1960. After this time, manufacturers of tanks may apply to the 3-A Symbol Council for authorization to use the 3-A Symbol on tanks complying with the new standard.

The revised standard may be secured, in multilith form, by manufacturers of farm tanks from Dairy Industries Supply Association, Technical Office, 1145 19th St., N.W., Washington 6, D. C.

First general publication of the revised standard will appear in the June issue of the *Journal of Milk and Food Technology.* Until then, in order to avoid confusion, the 3-A Committees have not authorized distribution of the revised standard outside the committees, which include as members or observers all manufacturers of farm tanks, it was stated.

Under procedure adopted by the Committees, a six-month period is provided before the revision of March 1 becomes effective, in order for manufacturers to make an orderly disposition of existing inventories. Thus, only after Sept. 1, 1960, will the 3-A Symbol Council authorize the use of the 3-A Symbol on farm tanks which comply with the revised farm tank standard.

LATENT HEAT STORAGE FOR AIR CONDITIONING



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Installation & Service Practices In Commercial Refrigeration

One of a group of discussions on several phases of the installation, operation, and servicing of commercial refrigeration equipment.

By Frank J. Versagi

Air Movement

"Air movements across an open fixture will cause the case temperature to be high, create defrosting difficulties, and increase operating costs."

This straightforward warning found in manufacturers' literature is so frequently ignored by installing contractors of air conditioning and by store operators that it accounts for a major share of the complaints received by commercial refrigeration manufacturers about their products.

After all, what is more natural than to blame the fixture when case temperatures do not drop low enough, when defrosting becomes a problem, when operating costs soar?

Room air currents or drafts from any source whatever can have this adverse effect on open type display cases, since the cold air in the fixture is displaced from the case, resulting in one or all the difficulties mentioned.

Typical culprits are air conditioning grilles, unit heaters, fans, open doors. The difficulties due to drafts are not limited to one season, although warmer weather does tend to aggravate the situation as can be seen from the following material sent its dealers by one manufacturer.

"At the right are listed some common complaints encountered in warm weather. These are reminders that now is the time to do something about open doors, windows, air conditioning diffusers, and the like that direct drafts of moving air in the direction of open refrigeration cases.

"The remedy for all these difficulties is either to divert the air at its source away from the fixture or to relocate the fixture.

"Should this be impractical for some reason, some method must be worked out to protect the fixture from the moving air."

Complaint	Cause
Ice cream is soft at ends of cabinet and along return air duct side of display case.	Room drafts forcing cold air out of case.
Product collecting frost and ice.	Warm air hitting cold product.
Case will not hold temperature from noon through closing time.	Partially iced coil caused by room air entering fixture.
Excessive running time of unit.	Partially iced coil caused by room air entering fixture.
Condensation on price tag molding and various spots around the display portion.	Draft forcing cold air over these surfaces.
Ice build up at inside ends of low temperature equipment.	Draft forcing cold air over these surfaces.
Excessive unit noise in self-contained fixtures.	Unit attempting to operate beyond its rated capacity because of room air entering fixture.

Air Currents Classed as Continuous, Intermittent

Discussing this same general problem, another manufacturer classifies air currents according to source—continuous and intermittent. As continuous sources are listed blower or suction fans of the floor, wall, or ceiling type; air conditioning units or duct outlets; forced air space heaters, overhead and floor type.

In the intermittent category are the opening and closing of entrance doors by customers or store personnel; winds or drafts from natural causes; occasionally, a refrigeration condensing unit located near a fixture.

"The appearance of white, fine-grained crystal frost on plates of low temperature frozen food equipment is normal. However, if frost accumulates rapidly with severe icing on the back wall and in the right and left hand corners, this is generally indicative of excessive air movement," the bulletin reads.

One method of detecting air currents, it continues, is gently to blow smoke into the display area of the open self-service refrigerator so that the smoke will mix with the refrigerated air just above the product. If this smoke rolls or shows any visible evidence of turbulence or spills over the front of the display case out into the room, this is a clear indication of excessive air currents.

Recognizing that the very presence of the person blowing the smoke may shield some air currents reaching the fixture normally, the bulletin proposes another procedure:

"By using three or four lengths of toilet tissue cut or torn into streamers approximately 2 in. wide and allowing these streamers to extend down into the refrigerated area from the front top of the fixture across the full length of the refrigerator, it is possible to determine readily by their movement whether stray air currents are present. The strips of tissue can be moistened at the top and stuck to the fixture without damaging the fixture." (Editor's note: There's a definite difference in Delsey's!)

"This method of testing air currents will enable the person making the check to stand away from the fixture. Air disturbance caused by persons passing the refrigerator are considered normal."

Nighttime Exhaust Fan Was Sucking Cold Air From Meat Case

A case history presented in a previous discussion of this subject (Techcenter, Nov. 17, 1958) gives a specific example of the type of problem encountered by commercial refrigeration manufacturers: A single meat case in a store would hold temperatures during the day, but when the store opened each morning, product temperatures were always abnormally high. Performance of the case, as such, was all right; incoming air at 28°; temperature spread across the case about 6°.

The answer: a ceiling exhaust fan mounted directly above this one fixture was turned on every night to clear out the store air. This exhaust fan literally pulled the refrigerated air out of the display case.

While the mechanical components of the fixture were doing their part and the evaporator temperature was correct, constant removal of the refrigerated air during the night resulted in excessive product temperatures in the morning.

Air movement, alone, is bad enough. Coupled with high humidity, air movement places refrigerated fixtures at a definite disadvantage. And in these cases, adjusting controls, fans, baffles, on the case without first checking for outside air currents is wasted effort.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

R. O. Davison Heads Dairy Industries Supply Association

CHICAGO — R. O. Davison, The Kelco Co., was elected president of Dairy Industries Supply Association, succeeding D. G. Colony, Manton-Gaulin Mfg. Co., Inc., who was advanced to chairman of the executive committee, at the 41st annual meeting of DISA at the Edgewater Beach hotel here.

Paul K. Girton, Girton Mfg. Co., was elected vice president. Roy E. Cairns, Waukesha Foundry Co., was re-elected treasurer.

Roberts Everett, executive vice president of the association, was the recipient of the 12th DISA honor plaque. The veteran supplier-equipper executive, who first came to work for DISA in 1919, will step into semi-retirement in July.

FRANCHISED DEALER
Coldin NEW YORK
Your Key to BETTER REFRIGERATION
Your Sign of
PROFITABLE REFRIGERATION BUSINESS
Inquiries Invited
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A.O. Smith has the horses!

800 to 1 hp favorites for quiet operation, low maintenance and long-life service . . .

From the case of the A. O. Smith Motor Man — a complete stable of integrals that include single-phase models (1-5 hp) or polyphase (1-800 hp). Also a team of fractional-hp motors. All are sure bets to give top performance over the long, long haul.

And there's an A. O. Smith Motor Man near you — chomping at the bit to give you 24-hour action on all parts and service orders.

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Through research ..a better way
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ELECTRIC MOTORS
Tipp City, Ohio
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Your Customers' Best Buy. . .
(and yours, too!)
IDEAL
Speed-Freeze
PRODUCTS
BEVERAGE COOLERS
unexcelled storage capacity with Ice Cube Makers
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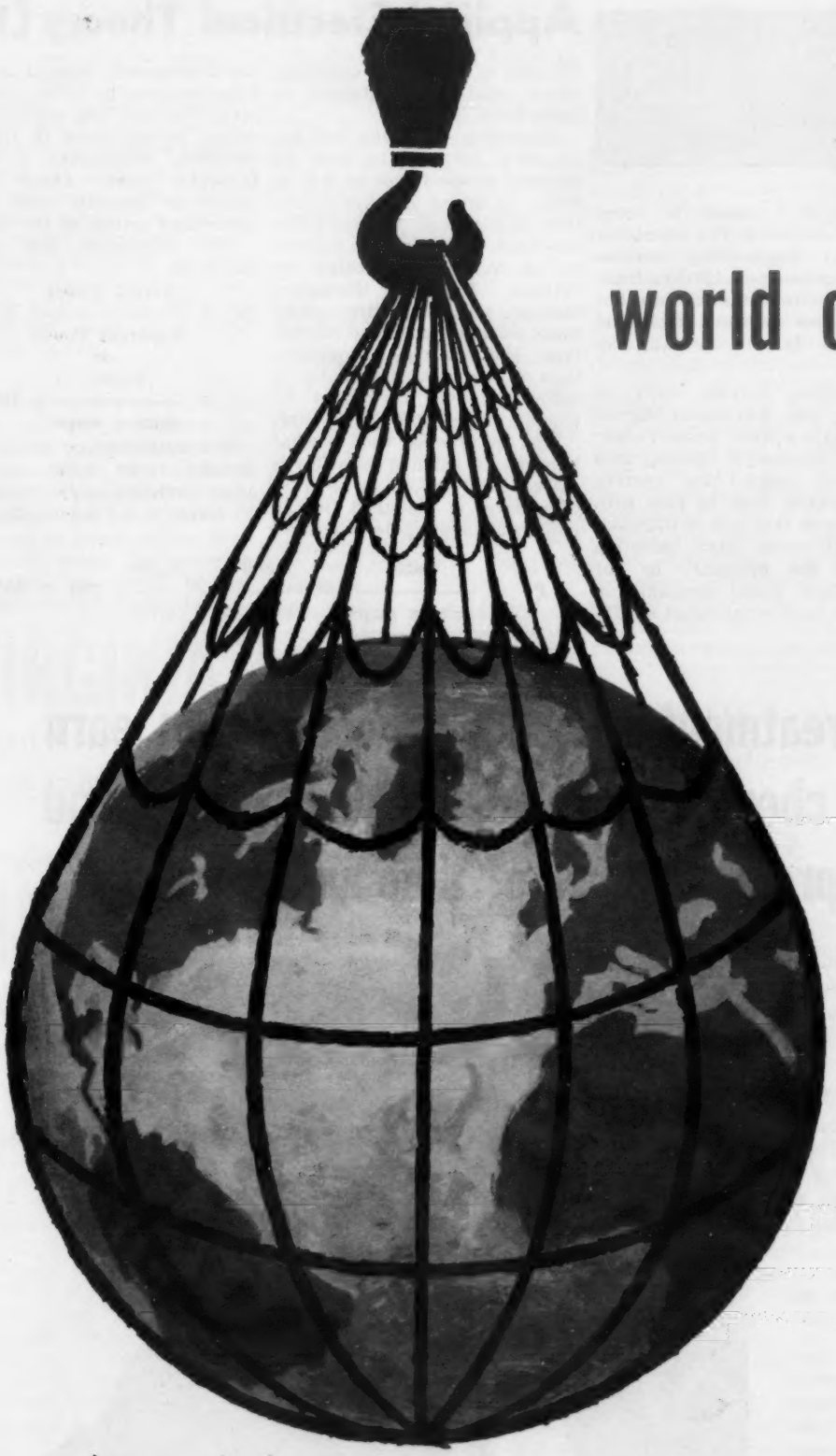


There's a world of business waiting for your company overseas.

Ten years from today the free world's production of goods and services will have doubled.

Ten years from today the free world will have a population of 2,000,000,000.

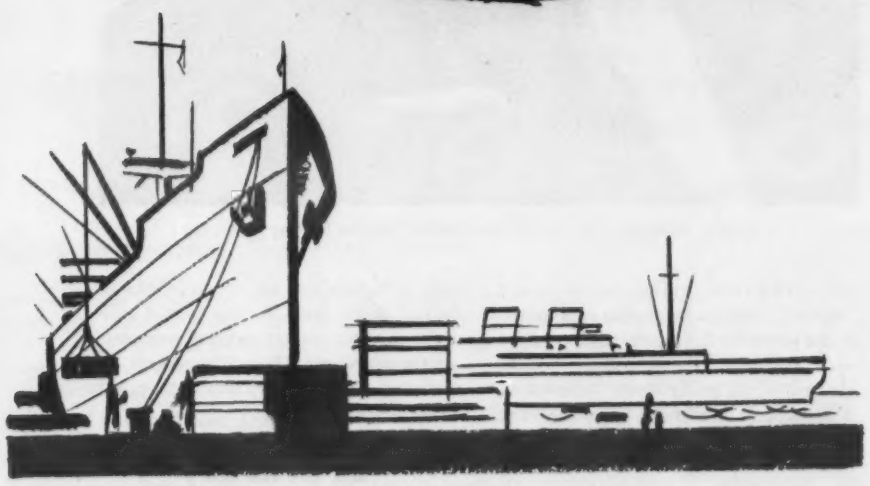
Ten years from today U. S. exports will be up $8,000,000,000.

Ten years from today foreign sales of U. S. subsidiaries will have doubled to more than $60,000,000,000.

IS YOUR COMPANY TAKING ADVANTAGE OF THIS EXPANSION?

WORLD TRADE ISSUE—AUGUST 1

By advertising in the World Trade issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS August 1, you can sell subscribers in 51 nations on your products and your services. Or you can attract new suppliers and distributors to sell your products. The free world is one market . . . let your company grow with it.



NEW YORK, 521 Fifth Ave., MUrray Hill 2-1928-9, Robert M. Price
CHICAGO, 134 S. LaSalle St., FRanklin 2-8643-4, Rex Smith
LOS ANGELES, 4710 Crenshaw Blvd., AXminster 2-9501, Justin Hannon
DETROIT, 450 W. Fort St., WOodward 2-0924, Al Schildhammer

AIR CONDITIONING HEATING & REFRIGERATION NEWS

The Newspaper of the Industry

RESIDENTIAL • COMMERCIAL • INDUSTRIAL

450 WEST FORT STREET • DETROIT 26, MICHIGAN

TECH CENTER

by Frank J. Versagi, Technical Editor

Power Factor

In direct current circuits, and in alternating current circuits containing pure resistance only, power—in watts—is equal to the product of volts and amps.

P = EI

Thus, an incandescent lamp drawing 0.8 amp on a 120-volt line would be

P = EI = 120 x 0.8 = 96 watts

or, practically, a 100-watt bulb.

A 120-volt circuit containing several resistance devices with a total amp draw of 15:

P = EI = 120 x 15 = 1,800 watts or 1.8 kilowatt

In this type of circuit, **power factor** is practically 100%; that is, the circuit actually expends very close to the calculated 1,800 watts. Power factor may be defined as the ratio of consumed power to supplied power or as the percentage of time that the product of volts times amps equals actual power.

A 100% PF can only exist when the voltage and current are in phase as explained in article 17. When either inductive reactance or capacitive reactance causes the current to lag or lead the voltage (get out of phase), the product of volts and amps gives only the **apparent power,** rather than the **actual power.**

Again ignoring the fundamental mathematics of the phenomena for the practical, the point is that for a typical commercial circuit, high in inductance, the utility must supply some power which does not actually perform work and which is not measured on the normal wattmeter, thus depriving the company of revenue.

If, for example, the calculation of measured volts and amps equals 2,000 watts, but the device on the line actually shows a 1,600-watt consumption, the power factor is:

$$PF = \frac{1,600}{2,000} \times 100 = 80\%$$

This means that only 80% of the supplied power is doing measurable work. The remaining 20% is **magnetizing current** which makes possible the functioning of induction devices but which does no work itself and therefore is not normally recorded.

Induction devices, such as motors and fluorescent lights, never have a 100% power factor. In fact, fluorescent lighting uses so much magnetizing current that utilities tend to look with disfavor on this type of illumination. However, since induction devices are necessary to our technology, power companies in general have established a 90% PF as a practical minimum which must be maintained on their lines.

Depending on design and application, motors may have an inherent power factor as low as 60%. In terms of wave forms, this means that the inductive reactance is causing the current to lag considerably behind the voltage. Previous discussion showed that capacitive reactance tends to make the current lead the voltage. Logically, then, a low power factor due to inductance can be raised by placing capacitance in the line.

And in practice this is what happens. A running capacitor is placed on a motor; a bank of capacitors is installed in an industrial plant; pole capacitors are strategically located on distribution lines by utility companies. The resulting capacitance, acting in opposition to the inductance, establishes a more favorable power factor than would be possible with only inductance acting on the line.

The calculation for power factor is:

$$PF = \frac{\text{Actual Power}}{\text{Apparent Power or watts}} \times 100 = \frac{\text{watts}}{\text{volts x amps}} \times 100$$

$$PF = \frac{\text{watts}}{\text{volts x amps}} = \frac{1,380}{115 \times 15} = \frac{1,380}{1,725} \times 100 = 80\%$$

If a wattmeter on an air conditioner reads 1,380 and the amps independently measured 15 amps on a 115-volt line.

* * *

Applied Electrical Theory (18)

WATER COOLER

10 GALLON PRESSURE TYPE

$139.50*

*To DEALERS ONLY

- STURDY • ECONOMICAL
- STAINLESS STEEL DRAIN TOP
- NICKEL FINISHED COPPER COOLING TANK
- ½ H.P. TECUMSEH HERMETIC UNIT
- PRE-COOLER
- 5-YEAR WARRANTY ON REFRIGERATION CYCLE

REMCOR Model CW-10A

Also 5 gallon Bottle Water Cooler—$89.50

REMCOR PRODUCTS COMPANY
321 EAST GRAND AVENUE,
CHICAGO 11, ILLINOIS
manufacturers of water coolers since 1940

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

One in a series of interviews with the men who are "Virginia"

"Add water treatment to your services—you earn money on the chemicals, on your added service, and on your more productive use of time and manpower"

Rollin Israel discusses the economic advantages that service companies obtain through the addition of water treatment to their services.

Q Is water treatment easy to sell?

A Service men who take the trouble to learn all the facts about water treatment usually have little trouble in selling it. Its advantages to the customer are so many and so obvious that the sales story is a very convincing one.

Q What are the benefits to the customer?

A His equipment lasts longer, to begin with. And there are a number of facets to that one point that could be touched on—less corrosion, for example, and better heat transfer—so the equipment doesn't have to run as much. Also the customer will have fewer costly breakdowns. This is a very important point, because a breakdown can mean the loss of customers—or in the case of refrigeration, the loss of thousands of dollars' worth of perishable foodstuffs.

Q What about the profit to the service company?

A This is the most attractive side of water treatment—that it benefits the customer so much, yet is still so profitable to the service company. Profit on the chemicals, profit on the service call charges, as well as productive use of time and labor. Much of the water treatment service can be done in the off season. It offers a competitive advantage, too.

Q How can water treatment offer a competitive advantage?

A With every service company out to get as much business as possible, you can expect your customers to get calls from competitors' salesmen. Water treatment gives you the opportunity to call on your customers more often—preserve your good relations with them. And with this extra service, *you* are the all-around "expert." When scale chokes up a unit—or the water loads up with algae or slime—the customer can depend on you to get operations going again. Your competitors can't offer this service, so you're one up on them all the way across the board.

Rollin H. Israel, Manager, Refrigeration Division, Virginia Smelting Company

Q Does "Virginia" offer a company any help in getting started?

A We offer that and much more. We supply most of the simple tools needed to get started, including a booklet containing clear instructions on how to do the work. We make the chemicals—a complete line of safe, effective water treatment chemicals. And the "Virginia" labs are always at a customer's disposal whenever he needs water or scale analysis. If he runs into any tough problems, he can phone, wire or write us, and we'll put one of our water treatment engineers on the problem for him. If necessary, he can even come out and tackle the problem on the job.

Get the full story

Get a free copy of "How to Turn Water into Money." It contains all the details on how to add water treatment to your services. Write Refrigeration Division, VIRGINIA SMELTING COMPANY, 483 Jefferson St., West Norfolk, Va.

Esotoo • V-Meth-L • Can-O-Gas • VascoCel • Permagum Presstite Tape • Water Treatment Chemicals • Suniso Refrigeration Oils • National Sales Agent & Repacker for Du Pont's "Freon" Refrigerants

Looking at it another way:

$$\frac{\text{1,380 watts}}{\text{115 volts}} = \text{12 amps}$$

12 amps actually do work. 15-minus-12, or 3 amps, are being supplied as **wattless energy.**

Where an industrial inductance load is very high and the consumer refuses to install power factor-correcting capacitor banks, the power company will install special meters which measure both working and wattless energy, both actual and apparent power.

* * *

In d.c. circuits, then, expended power may be determined by multiplying voltage and current.

In a.c. circuits, the power is equal to the product of voltage and current only when these two items are in phase. When they are not in phase, the power in the circuit will always be less than the product of the multiplication. Actual power is always less than apparent power.

Occasionally, power factor is expressed as a decimal instead of a percentage. A 70% PF would be 0.7; a 90% PF is written 0.9, and a 100% power factor is spoken of as a power factor of 1.

Next: The "Silent Circuit"
file guide—ELECTRICITY: power factor

Western Show--

(Continued from Page 1, Col. 1)

1 p.m. to 10 p.m. from Wednesday through Friday. On Saturday, April 30, the Exhibit hours will be from 10 a.m. to 6 p.m. Both the Exhibit and the Conference sessions are open to anyone who has a genuine interest in the air conditioning, heating, ventilating, and refrigeration fields.

Conference sessions will be held throughout the day on the four days, and early evening sessions are scheduled on Wednesday, Thursday, and Friday. The Conference program, put together under the direction of Arthur J. Hess, president of Hess, Greiner, and Polland, and immediate past president of ASHRAE, will offer symposiums, panel discussions, and individual presentations on a broad group of subjects relating to the application of the industry's products.

On Wednesday afternoon, April 27, starting at 2:30 p.m., there will be a panel discussion on "Central System Refrigeration for Air Conditioning." Wednesday night, starting at 6:30 p.m., there will be a symposium on "Fan Drive Components."

On Thursday afternoon there will be a symposium on "Testing and Balancing" covering this process for air handling, refrigeration, and general air conditioning systems. On Thursday night, starting at 6:30 p.m., there will be a presentation on "High Velocity Ductwork."

A "Temperature Control Clinic" is scheduled for Friday afternoon, starting at 2:30 p.m. On Friday night a symposium on "Trouble Shooting" will start at 6:30 p.m.

Saturday morning, April 30, starting at 10:30 a.m., there will be a symposium on "Specification Writing." Saturday afternoon, starting at 2 p.m., there will be two presentations, one on "Lighting Loads In Air Conditioning" following by one on "Hospital Air Conditioning."

Products to be displayed at the Exhibit will include those produced by manufacturers in all parts of the country, not just those who produce in the Far West, it was emphasized by the Western Air Conditioning Industries Association, sponsor of the event.

Idea behind the Western Exhibit and Conference, aimed at drawing attendance from the 11 Western states, is to offer industry personnel who are remote from the centrally located centers in which national industry shows and meetings are held, the opportunity to obtain the benefits that such a show offers, says William P. Tennity, president of the Western Industries Association.

More Than 80 Expected at Airtemp Workshop In Dayton April 24-27

DAYTON—More than 80 persons from Chrysler Airtemp distributorships were expected to attend the Advertising and Sales Promotion Workshop being held April 24-27 under sponsorship of Chrysler Corp.'s Airtemp Div.

Richard R. Routh, Jr., Chrysler Airtemp's advertising and sales promotion director, said the purpose of the workshop is "to assist our distributors in intelligent, effective planning of their advertising and sales promotion funds and, in turn, give them the knowledge to assist their Airtemp dealers."

Some of the topics to be discussed are budget planning; trade, newspaper, radio, and television advertising; direct mailing; cooperative advertising; methods of selecting an advertising agency; effective exhibits; sales incentive programs; working with the local Better Business Bureau; and press relations.

One of the workshop's sessions will include a visit to a Dayton TV station. Both local television staffs will cooperate in a demonstration showing of advertising preparation and the discussion of local rates, package rates, and the most effective times on television.

Among 13 featured speakers at the workshop will be George F. Taubeneck, editor and publisher of AIR CONDITIONING, HEATING & REFRIGERATION NEWS.

Other speakers are Lewis T. Beman, national advertising manager, *The Cincinnati Enquirer;* Samuel Wasserman, vice president, James Grey, Inc., New York City; Irv Trachtenberg, group sales manager, Radio Advertising Bureau, Inc., New York City; Don H. Kemper, president, Don Kemper Co., Inc., Dayton; Earl Lifshey, *Home Furnishings Daily,* New York City; Joseph Russo, account executive, Product Presentation, Inc., Cincinnati; George Parnaby, vice president and director of marketing, The E. F. MacDonald Co., Dayton.

Also, Allan E. Backman, executive vice president, National Better Business Bureau; Brainard Platt, business editor, *The Journal Herald,* Dayton; James C. Hirsch, director of national sales, Television Bureau of Advertising, Inc., New York City; Stanley Mouse, sales manager, WHIO-TV, Dayton; Dale A. Smith, sales manager, WLW-D.

Despite FTC

Crane Continues Briggs Stock Purchase Offer

CHICAGO—Despite the fact that Crane Co. faces a Federal Trade Commission complaint that it has violated anti-trust laws by acquiring stock or assets of competing firms, the company has sent letters to stockholders of Briggs Mfg. Co. requesting tender of 100,000 shares of that company's stock at an offered price of $10 per share.

Adding that 100,000 shares to the 176,000 shares it already holds would give Crane about 25% of Briggs stock, estimated as enough for working control of the Detroit plumbing firm.

Crane's offer is good until 3 p.m., May 3.

Crane reportedly acquired its 176,000 shares on the market last fall at an average of $12 per share.

Briggs has rejected a Crane offer of $14 million in cash for the company's assets.

"VIRGINIA"

Water Treatment Chemicals

CORRECTIVE MEASURES. Scale and algae, the enemies of good heat transfer, can be removed quickly and easily with "Virginia" Scale Removers. For heavy scale deposit and for speedy action, use the liquid. For safety in handling and protection to equipment, use the solid.

For algae control only: #1 controls the blue, green, brown varieties; #2 is for destroying algae-slime contamination; #3 is recommended for resistant strains of algae.

To remove scale and slime in ice machines use "Virginia" Ice Machine Cleaner.

PREVENTIVE TREATMENT. "Virginia" Scale and Corrosion Inhibitor does two important jobs: (1) retards scale buildup by alkaline water; (2) prevents corrosion caused by acidic water. Slow solubility of the crystals makes feeders unnecessary.

"Virginia" Chilled Water Treatment prevents rust and corrosion in *closed* circulating lines—hot or cold.

Refrigeration Division
VIRGINIA SMELTING COMPANY
West Norfolk, Va.

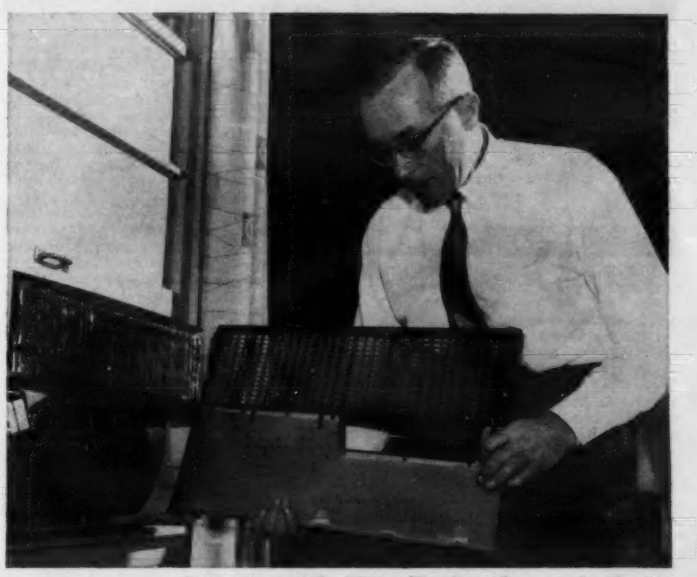
VIRGINIA® Chemicals

Available in Canada and many other countries

Westernaire IS UNFAIR TO OTHER MANUFACTURERS

We build private brand air conditioning and refrigeration equipment for several hundred accounts, better and at less cost than they can do it for themselves.
"Why don't you get the whole story?"

WESTERN SUPPLY CO.
Contract Manufacturing Div.
315 West Third Box 784
HUTCHINSON, KANSAS



"This permanent ScottFoam filter is easily secured with clips against the front panel grill," reports Mr. Moffitt. "And it can be just as easily removed, washed and replaced by the housewife."

SCOTTFOAM* FILTERS SPELL CONVENIENCE TO OUR CUSTOMERS *says J. P. Moffitt, Department Manager—Room Air Conditioners, Westinghouse Electric Corporation*

"We try to build permanence into our products," states Mr. Moffitt. "That's why we use ScottFoam filters for all 37 models of our Mobilaire® Conditioners.

"These filters really take rough handling. We make our units so the filters can be easily removed, washed, rung out like a towel and replaced. And there's never any shrinkage. Another advantage is ScottFoam's germicidal action, which stops growth of bacteria trapped in the filter."

"From a manufacturer's standpoint, we like ScottFoam filters because they're indestructible in our assembly operations. And ScottFoam is completely safe to handle. No fears of workers getting skin irritations or slivers in their eyes or hands from ScottFoam."

Write for your free booklet, SCOTTFOAM FILTER MEDIA

See how permanent ScottFoam filters can be adapted to your products — and give you added sales features.

Manager, Industrial Sales, Foam Division A-2
Scott Paper Company, Chester, Pennsylvania

Yes, I'm interested in receiving your technical booklet on sales-building ScottFoam filters.

Name_____

Title_____

Company_____

Address_____

City_____ Zone_____ State_____

I'm presently using the following types of filters:_____

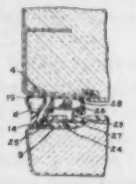
*T.M. Patent Pend.

SCOTTFOAM
another product of research by
Scott Paper Company

PATENTS

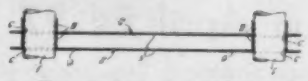
Week of December 1

2,914,819. REFRIGERATOR DOOR CONSTRUCTION. Alfred G. Janos, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



1. A door for a refrigerator cabinet comprising an outer panel having a flange extending inwardly from the edges thereof, a sealing gasket having its base contacting said flange, a plurality of spacedly arranged magnets supported along one edge of said door for magnetically holding said door in a closed position relative to said cabinet. . . .

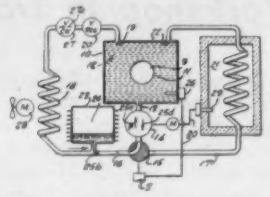
2,914,942. METHOD OF MAKING A HEAT EXCHANGER. Arthur B. Modine, Racine, Wis., assignor to Modine Mfg. Co., Racine, Wis.



1. The method of forming a heat exchanger including a secondary surface heat exchange element, which comprises the following steps: subjecting thin flat sheet metal stock of predetermined substantially uniform thickness to forming pressure distributed over a sheet face in a predetermined pattern of non-uniform pressures between opposite faces of said element to effect a flowing of metal from certain areas to laterally adjacent areas to produce an element of a heat exchanger providing integrally connected relatively thick portions at longitudinally spaced points and relatively thin portions intermediate said points. . . .

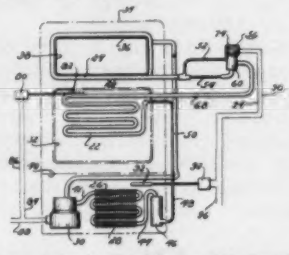
2,914,924. REFRIGERATION SYSTEM. George B. Murphy, Carle Place, N. Y.

1. Refrigeration apparatus comprising, means containing a flowable convective carrier, expandable and contactable means containing a refrigerant medium and being immersed and suspended in said carrier, means for circulating said carrier through said first-mentioned means and into alternate conduits externally of said first-



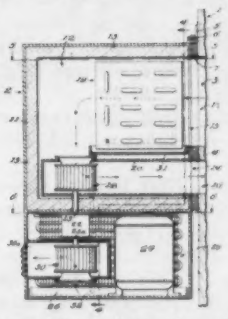
mentioned means, a first of said conduits including a branch for returning said carrier to said first-mentioned means, the second of said conduits being operatively associated with a region to be cooled. . . .

2,914,925. REFRIGERANT CONTROL MEANS FOR MAINTAINING MULTIPLE TEMPERATURES. Owen D. Martin, Farmington Township, Oakland County, Mich., assignor to American Motors Corp., Detroit.



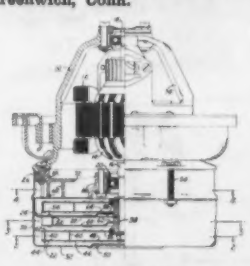
In a two temperature refrigerating system comprising two evaporators in series flow circuit and a condensing unit, a conduit interconnecting the outlet of the second evaporator in said circuit with said condensing unit, a small diameter conduit interconnecting said condensing unit with the inlet of the first evaporator in said circuit for regulating the flow of refrigerant thereto. . . .

2,914,927. DETACHABLE REFRIGERATING UNIT. Sebastien S. Corhanidis, Athens, Greece. Application Nov. 17, 1955, Serial No. 547,526.



In a portable refrigeration unit for external use on the side of a chamber to be cooled, a casing including upper and lower compartments insulated from each other, inlet and outlet ports in said upper compartment, said inlet port overlying said outlet port and having substantially greater area than said outlet port whereby air to be cooled is drawn therein at an appreciably lesser velocity than the velocity at which it is expelled from said outlet port. . . .

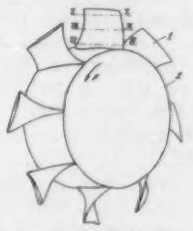
2,915,237. CENTRIFUGAL BLOWERS. Frank L. Galiulo, Harrison, N. Y., and Garret Mott, Jr., New Canaan, Conn., assignors to Electrolux Corp., Old Greenwich, Conn.



1. In a centrifugal blower, a housing, an impeller rotatably disposed therein and provided with blading for discharging air at the periphery thereof, said housing having an axially located outlet opening disposed radially inwardly from said periphery, and stationary vanes in said housing between said periphery and said outlet opening. . . .

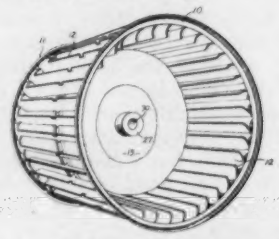
2,915,238. AXIAL FLOW COMPRESSORS. Joseph Szydlowski, Societe Turbomeca, Bordes, France.

1. A wheel for axial compressors operating at ultrasonic and supersonic speeds, comprising, in combination, a body, said body being adapted for rotation about an axis, and a plurality of blades supported at their bases by said body, the centers of the cross-sections of each blade through planes parallel to the plane tangent to the body at the blade base being substantially aligned from the blade foot to



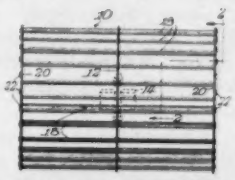
the blade tip along the radius passing through the center of the blade base. . . .

2,915,239. BLOWER. Philip Borkat, South Euclid, Ohio, assignor to National-U.S. Radiator Corp.



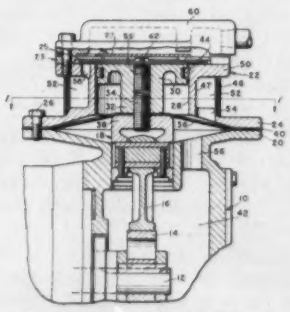
1. A centrifugal blower comprising a plurality of spaced blades circumferentially arranged to form a wheel open at at least one end for air inlet purposes, said blades being turned radially inwardly, the inner edge of said blades being provided with protruding lugs cut out of the edge of the adjacent blade. . . .

2,915,240. BLOWER WHEEL CONSTRUCTION. Joseph F. Kochevar and John H. Reichwein, Dundee, Ill., assignors to Revcor, Inc., Carpentersville, Ill.



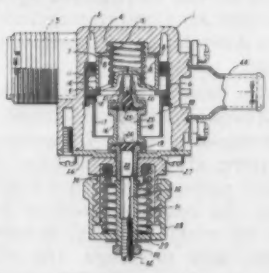
1. In a blower wheel construction, the combination comprising plate means having a plurality of slots disposed therein, blade means traversing said plate means, each of said blade means having a central portion thereof disposed in a plate slot whereby movement of said blade relative to said plate in a direction substantially transverse to said blade's longitudinal axis is prevented. . . .

2,915,241. COMPRESSOR. August M. Stenger, Painted Post, N. Y., assignor to Ingersoll-Rand Co., New York, N. Y.



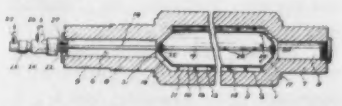
1. In a piston type compressor, in combination, a casing member, a cylinder member provided with a bore and having one end mounted on the casing member, cooling ribs on the cylinder exposed to the atmosphere, a piston reciprocable in the cylinder bore. . . .

2,915,248. THERMOSTATIC VALVE HAVING ADJUSTABLE TEMPERATURE SETTING. Thomas Edmund Noakes, Detroit, Michigan, assignor, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York, N. Y.



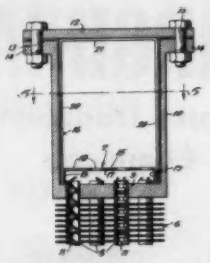
The combination comprising a valve housing forming an end wall; port means internally of the housing forming a valve seat; a port-closing element movable toward and away from said seat; a power element casing fixedly positioned in said housing on the aforementioned end wall and having axially aligned guide sleeves on its opposite ends; a first piston extended through one of said guide sleeves for moving said port-closing element; a second piston extending within the other guide sleeve. . . .

2,915,292. HEAT-TRANSFER APPARATUS. Frank R. Gross, Akron, Ohio. Application Dec. 24, 1953, Serial No. 327,741.



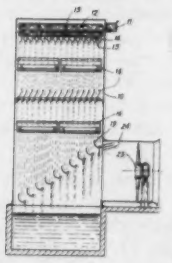
1. In heat transfer apparatus, the combination comprising a cylindrical metal body having a cylindrical cavity therein with communicating openings of reduced diameter extending through the ends of the said body, a flexible and collapsible bag for insertion into said cavity in a collapsed condition and having a surface when expanded cooperating with the cavity-defining surface of said body to define a passage for conducting a heat transfer fluid through said cavity. . . .

2,915,294. HEAT EXCHANGER AND TURBULATOR RETAINER THEREFOR. Donald W. Christensen, Racine, Wis., assignor to Young Radiator Co., Racine, Wis.



1. In combination with a heat exchanger involving a multi-tube core unit having the tube ends bonded to a header mounting a tank and having turbulators removably arranged in the tubes, a turbulator-retainer comprising, a channel-shaped member of a length and width enough less than the internal length and width of the tank to loosely fit in the tank with the transverse parallel parts of the member resting on the header. . . .

2,915,302. COOLING TOWER. Joseph Jacir, Neuilly-Plaisance, France.



1. In a liquid cooling apparatus, in combination, a vertical housing having an open upper end and having a lateral opening adjacent its lower end, means supplying air to the housing through the opening with the air passing upwardly in the housing, means at the open upper end for supplying water into the housing through the upper end, a water distribution means arranged transversely in the housing below the upper end, said water distribution means including a plurality of vertically disposed, horizontally spaced apart, parallel blades. . . .

2,915,405. FROZEN FOOD INDICATOR. John Hays Hammond, Jr., Gloucester, and Emory Leon Chaffee, Belmont, Mass.; said Chaffee assignor to said Hammond, Jr.

An indicator for frozen food packages comprising an elongated transparent container adapted to be embedded in said package and having two sections of different internal diameters forming larger and smaller sections joined by a conical section, a piston slidable in said larger section and having a conical surface to fit tightly in said conical section. . . .

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Applying Thermostatic Expansion Valves To Systems Requiring Capacity Control (2)

Operating a refrigerating or air conditioning unit at reduced capacity usually presents problems. The problems vary from refrigerant flow, through oil return, to air supply. This two-part article discusses the application of the thermostatic expansion valve to various systems requiring capacity control. Part I was published in the April 18 issue.

By E. F. Kounovsky, Sporlan Valve Co., St. Louis

Where compressor capacity reductions are **below** 35% of full capacity, additional expansion valves, distributors, and other controls may be required. Following are a few of the control methods which can be used on such systems.

1. **Two or More Evaporator Sections Handling the Same Load**

Fig. 1 shows a large direct expansion evaporator split into two equal independent sections, each fed with its own thermostatic expansion valve and refrigerant distributor. The operation of each section is controlled by a liquid line solenoid valve, electrically connected to the compressor capacity modulation system. One of the solenoid valves closes, stopping the flow of refrigerant to the evaporator section it serves when the compressor unloads to 50% of full capacity. The thermostatic expansion valve feeding the remaining section of the evaporator will then be loaded to full-capacity, although the compressor operates 50% unloaded. If the load is reduced further to 17½% of the full capacity of the system, the remaining thermostatic expansion valve will still be loaded to 35% of its capacity.

A number of variations and adaptations are possible with this same basic control method, depending on the number of compressor unloading steps, evaporator size, and air flow. For instance, the evaporator can be split into any number of sections, either equal or unequal, to obtain the best loading sequence for both evaporator and thermostatic expansion valve.

Evaporator sections may have parallel air flow as shown or may be in series. In the latter case it must be considered that the upstream section will carry a greater load per row and the selection of the solenoid valves, thermostatic expansion valves, and refrigerant distributors must reflect this.

2. **Single Evaporator Section Controlled by Two Thermostatic Expansion Valves.**

Fig. 2 shows two thermostatic expansion valves and two refrigerant distributors feeding a single evaporator. Each evaporator circuit is fed by two distributor circuits, one from each distributor. The solenoid valves are actuated by the compressor modulation system as in 1 above.

By sizing one of the valves and distributor combinations to handle approximately 67% of the total load and the other to handle the balance, three steps of capacity reduction are obtained. The minimum loading on either valve-distributor combination will never be less than 50%.

As an example, assume that thermostatic expansion valve and distributor combination "A" is chosen to handle 67% of the total load and combination "B," 33%. Assume also that the compressor unloads in six uniform steps. Then, by programming the solenoid valve operation with alternate steps of compressor unloading, the following schedule is obtained:

Cylinders Unloaded	Compressor Capacity–%	Solenoid Valve "A"	Solenoid Valve "B"	TEV and Distributor Load–% of Rated Capacity
0	100%	Open	Open	100%
1	83%	Open	Open	83%
2	67%	Open	Closed	100%
3	50%	Open	Closed	75%
4	33%	Closed	Open	100%
5	16%	Closed	Open	50%

From the foregoing, it is apparent that the minimum valve loading is at 50% of capacity —with the compressor operating at 16% of capacity.

3. **Single Evaporator Controlled by Two Thermostatic Expansion Valves, Each With a Different Superheat Setting.**

Fig. 3 is similar to Fig. 2, except that no solenoid valve is used.

In this example, each valve-distributor combination is sized for half of the full load and one of the thermostatic expansion valves is set to a higher superheat than the other.

At loads greater than 50%, the valve with the lower superheat setting is wide open, while the other modulates to make up the deficiency. As the load drops below 50%, the valve with the higher superheat setting will close and the modulation is taken over by the valve with the lower setting.

While this results in a wider range in operating superheat from minimum to maximum load than the other control methods, stepless control is provided. This is particularly desirable where compressor speed is controlled to regulate capacity.

4. **Control of Large Chillers**

On large direct expansion chillers from 35 to 200 tons good regulation can be obtained at low loads with conventionally applied thermostatic expansion valves. Valves in this capacity range generally utilize a double-ported, semi-balanced design. This type valve modulates well at somewhat lower loads than smaller capacity single-port valves.

(The End)

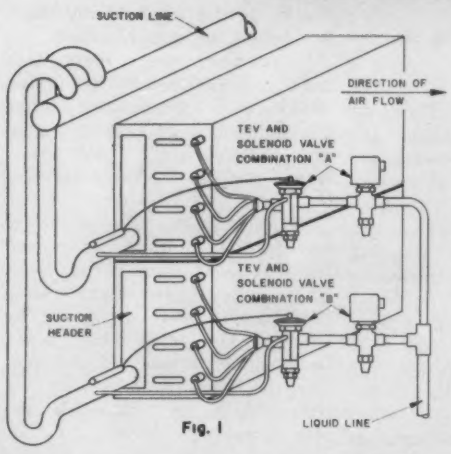

Fig. 1

FIG. 1 shows large direct expansion evaporator split into two equal independent sections, each fed with its own thermostatic expansion valve and refrigerant distributor.

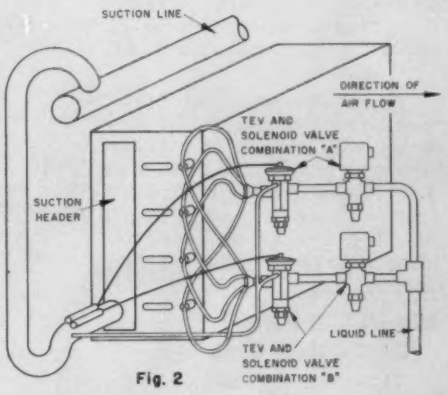

Fig. 2

FIG. 2 shows two thermostatic expansion valves and two refrigerant distributors feeding a single evaporator.

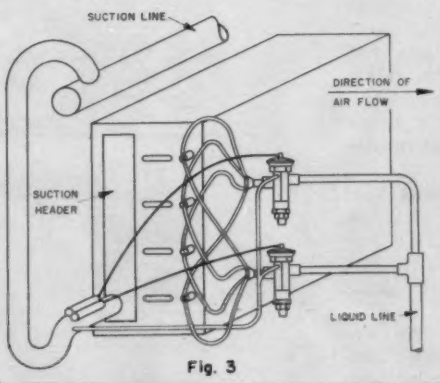

Fig. 3

FIG. 3 is similar to Fig. 2, except that no solenoid valve is used.

Columbus, Ohio AHSRAE Elects Officers, Tours Western Electric Plant

COLUMBUS, Ohio — An inspection trip through the new Columbus plant of the Western Electric Co., which is partially air conditioned, was the highlight of the recent meeting of the Columbus Chapter, ASHRAE. Harry Keen, Western Electric, was host.

New officers for the coming year, elected by the Columbus Chapter, include: president, Austin Jones, Kerotest Mfg. Co.; first vice president, Emil Stluka, R. S. Curl & Associates; second vice president, George Riverman, Westinghouse Corp.; secretary, John Hensel, Bogen, Inc.; treasurer, H. L. Barnebey, Barnebey-Cheney Co.; members-at-large of board of governors, Tom Simon, Westinghouse Corp.; William Taylor, Ebco Mfg. Co.

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UA Loses--

(Continued from Page 1, Col. 4)

issued last January, Downing had recommended that the board issue a cease-and-desist order but that it be limited to Bishop's operations "as there was no evidence suggestive of a threat to extend the picketing to other members of the council. . . ."

However, the NLRB agreed with its general counsel that Downing's proposed order was "too limited in scope to provide adequate protection to other employers and members of United Contractors Council from similar wrongful conduct by the respondent [Local 8]. The board said, in part:

"The respondent had previously committeed a similar violation with respect to another employer in this area, who was also a member of United Contractors Council, as the result of which a broad cease and desist order was issued against respondent.

Established Pattern Of Conduct Cited

"Moreover, the instant violation falls within the express terms of the order issued in that case. We therefore find that the respondent's established pattern of conduct requires the issuance of a broad order to prevent continuance thereof."

In his report, Downing said the complaint, issued Oct. 30, 1959, alleged that Local 8 had in August and September, 1959, engaged in unfair labor practices, while involved in a labor dispute with Bishop, by encouraging employes of two general contractors to strike with an object of forcing those contractors and other employers to stop doing business with Bishop.

It was noted that Bishop joined the council in June, 1959.

Downing said the issue in the case was whether Local 8 engaged in an unlawful secondary boycott by picketing two construction jobs on which Bishop was performing subcontracts for certain plumbing work.

The union, Downing noted, defended on the ground that its picketing was organizational and that it was confined to times when Bishop's employes were actually at work. Said the trial examiner:

"During previous periods, Bishop had operated non-union, and respondent had picketed earlier jobs where it found Bishop doing plumbing work. After Bishop joined the council in June, however, his two employes were represented by Local Union 787 . . . and they testified, without denial, that they were at no time contacted or requested to join Local 8.

"Indeed, one of them . . . testified that while in a layoff status . . . he endeavored to join respondent but was informed that there was no chance of getting on at that time."

In his concluding findings, Downing said that although the object of organizational picketing is to organize, "the evidence is undisputed that respondent at no time contacted or solicited Bishop's two employes to join the union, either before or after they joined United Construction Workers, and when Moore finally applied, he was rejected. . . .

"Furthermore, respondent readily abandoned its professed objective . . . immediately upon the suggestion of [the two general contractors] that they would not use Bishop's services on future jobs. . . .

"Significantly, also, it made no further effort to reach Bishop's employes after Sept. 4, by picketing the Muncie shop [established last Sept. 1 by Bishop] to which they regularly reported, nor did it picket any of Bishop's jobs . . . at times when only Bishop's employes were at work.

"The entire circumstances thus plainly showed that the organization of Bishop's employes was only a professed object of the picketing, and that an object, if not, indeed, the whole object was to force and require [the general contractor] to cease doing business with Bishop. . . ."

Weather Watch--

(Continued from Page 1, Col. 5)

selling messages during the three five-minute broadcasts on Sunday, coast-to-coast listeners to Honeywell's "Weather Watch" being encouraged to start making plans immediately "to beat the heat" by installing central air conditioning equipment in their homes.

The details of the long-range forecast call for warmer-than-usual weather to make its appearance around the middle of June, with high humidities accompanying the warm spells. Hot spells of several days duration are predicted for many of the population centers in the Midwest and East. July, it said, promises to be a "standout" month in terms of hot spells.

From Aug. 21 to Sept. 25, the Krick firm, a leading private weather forecasting organization, will supply winter forecasts which will be broadcast on the "Weather Watch" along with suggestions to homeowners to have their heating systems checked and modernized in advance of cold weather.

In connection with the broadcasts, Minneapolis-Honeywell is making available to dealers—at cost—a special slide show which can be used in making presentations to homeowners.

ASHRAE Region X To Meet May 6-7

FRESNO, Calif. — The 1960 spring meeting of Region X of the American Society of Heating, Refrigerating & Air-Conditioning Engineers will be hosted by the San Joaquin Chapter of Fresno on Friday and Saturday, May 6-7, in the Californian hotel.

John P. Lamborn of Fresno, general chairman of the regional meeting committee, said speakers for the technical session Friday afternoon are:

Arthur J. Hess of Los Angeles, immediate past president of ASHRAE, who will talk on the "Research Program of ASHRAE"; W. C. Holladay of Pasadena, who will discuss "Outdoor Design Temperatures"; and R. Lambert, whose topic is "Air Distribution."

The meeting program calls for a get-acquainted hour Thursday evening, May 5. On Friday, there will be registration at 8:30 a.m.; a session on general business and chapter's agenda items at 9:30 a.m.; welcome luncheon at noon with Dan D. Wile of Los Angeles, ASHRAE president, as the speaker; the technical session at 2 p.m.; and a cocktail hour and dinner-dance in the evening.

Scheduled for Saturday are a 9 a.m. session on nominating committee matters and chapter affairs, followed by a noon luncheon.

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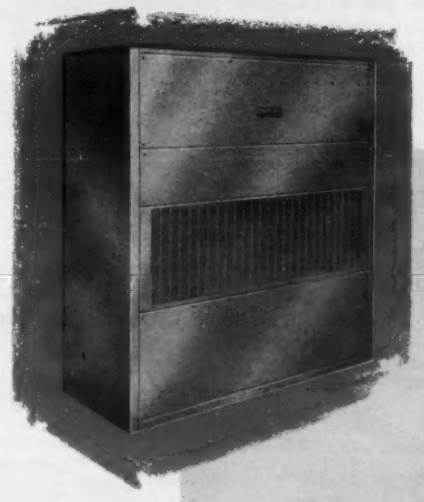

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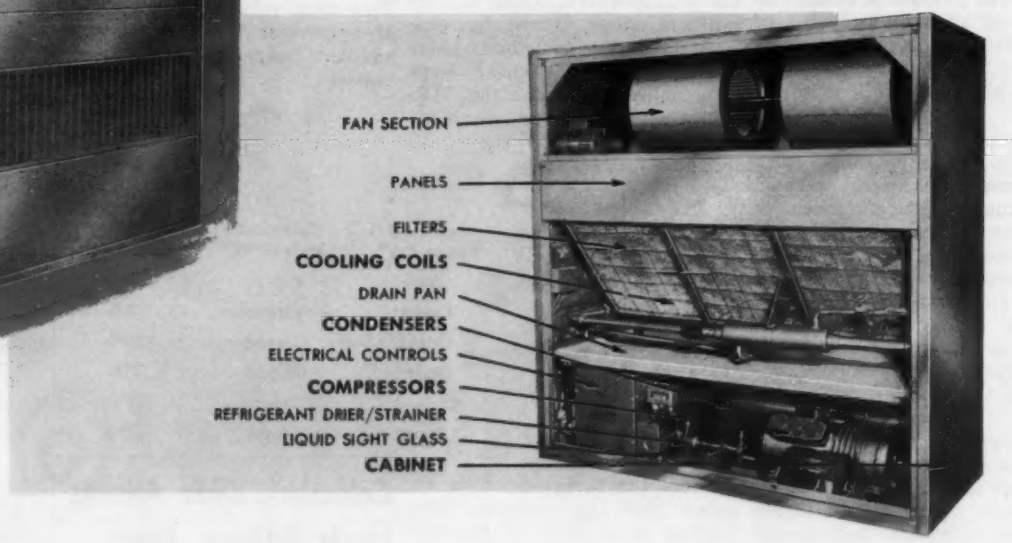

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